

10 20 30 40 50 60  
 MALAGAPAGG PCAPALEALL GAGALRL LDS SQIVIISAAQ DASAPPAPTG PAAPAAGPCD  
 70 80 90 100 110 120  
 POLLLFATPQ APRPTPSAPR PALGRPPVKR RLDLETDHQY LAESSGPARG RGRHPGKGVK  
 130 140 150 160 170 180  
 SPGEKSRYET SLNLTTKRFL ELLSHSADGV VDLNWAAEVL KVQKRRIYDI TNVLEGIQLI  
 190 200 210 220 230 240  
 AKKSKNHIQW LGSHTTVGVG GRLEGLTQDL RQLQESEQQL DHLMNICTTQ LRLLED TDS  
 250 260 270 280 290 300  
 QRLAYVTCQD LRSIADPAEQ MVMVIKAPPE TQLQAVDSSE NFQISLKSQ GPIDVFLCPE  
 310 320 330 340 350 360  
 ETVGGISPGK TPSQEV TSEE ENRATDSATI VSPPPSSPPS SLTTDPSQSL LSLEQEPLLS  
 370 380 390 400 410 420  
 RMGSLRAPVD EDRLSPLVAA DSLLEHVRED FSGLLP EEFI SLSPPEALD YHFGLEEGEG  
 430 440 450 460 470 480  
 IRDLFDCDFG DLTP LDF\*... ..

FIG. 1A

FIG. 1B

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1270	1280	1290	1300	1310	1320
CCGCTGGTGG	CGGCCGACTC	GCTCCTGGAG	CATGTGCGGG	AGGACTTCTC	CGGCCTCCTC
1330	1340	1350	1360	1370	1380
CCTGAGGAGT	TCATCAGCCT	TTCCCCACCC	CACGAGGCCC	TCGACTACCA	CTTCGGCCTC
1390	1400	1410	1420	1430	1440
GAGGAGGGCG	AGGGCATCAG	AGACCTCTTC	GACTGTGACT	TTGGGGACCT	CACCCCCCTG
1450	1460	1470	1480	1490	1500
GATTTCTGAC	AGGGCTTGGA	GGGACCAGGG	TTTCCAGAGT	AGCTCACCTT	GTCTCTGCAG
1510	1520	1530	1540	1550	1560
CCCTGGAGCC	CCCTGTCCCT	GGCCGTCCTC	CCAGCCTGTT	TGGAAACATT	TAATTTATAC
1570	1580	1590	1600	1610	1620
CCCTCTCCTC	TGTCTCCAGA	AGCTTCTAGC	TCTGGGGTCT	GGCTACCGCT	AGGAGGCTGA
1630	1640	1650	1660	1670	1680
GCAAGCCAGG	AAGGGAAGGA	GTCTGTGTGG	TGTGTATGTG	CATGCAGCCT	ACACCCACAC
1690	1700	1710	1720	1730	1740
GTGTGTACCG	GGGGTGAATG	TGTGTGAGCA	TGTGTGTGTG	CATGTACCGG	GGAATGAAGG
1750	1760	1770	1780	1790	1800
TGAACATACA	CCTCTGTGTG	TGCACTGCAG	ACACGCCCCA	GTGTGTCCAC	ATGTGTGTGC
1810	1820	1830	1840	1850	1860
ATGAGTCCAT	CTCTGCGCGT	GGGGGGGCTC	TAAGTGCAGT	TTCCGGCCCTT	TTGCTCGTGG
1870	1880	1890	1900	1910	1920
GGTCCCACAA	GGCCCAGGGC	AGTGCCTGCT	CCCAGAATCT	GGTGCTCTGA	CCAGGCCAGG
1930	1940	1950	1960	1970	1980
TGGGGAGGCT	TTGGCTGGCT	GGGCGTGTAG	GACGGTGAGA	GCACTTCTGT	CTTAAAGGTT
1990	2000	2010	2020	2030	2040
TTTTCTGATT	GAAGCTTTAA	TGGAGCGTTA	TTTATTTATC	GAGGCCTCTT	TGGTGAGCCT
2050	2060	2070	2080	2090	2100
GGGGAATCAG	CAAAAGGGGA	GGAGGGGTGT	GGGGTTGATA	CCCCAACTCC	CTCTACCCTT
2110	2120	2130	2140	2150	2160
GAGCAAGGGC	AGGGGTCCCT	GAGCTGTTCT	TCTGCCCCAT	ACTGAAGGAA	CTGAGGCCTG
2170	2180	2190	2200	2210	2220
GGTGATTTAT	TTATTGGGAA	AGTGAGGGAG	GGAGACAGAC	TGACTGACAG	CCATGGGTGG
2230	2240	2250	2260	2270	2280
TCAGATGGTG	GGGTGGGCCC	TCTCCAGGGG	GCCAGTTCAG	GGCCCAGCTG	CCCCCAGGA
2290	2300	2310	2320	2330	2340
TGGATATGAG	ATGGGAGAGG	TGAGTGGGGG	ACCTTCACTG	ATGTGGGCAG	GAGGGGTGGT
2350	2360	2370	2380	2390	2400
GAAGGCCTCC	CCCAGCCCAG	ACCTGTGGT	CCCTCCTGCA	GTGTCTGAAG	CGCCTGCCTC
2410	2420	2430	2440	2450	2460
CCCACTGCTC	TGCCCCACCC	TCCAATCTGC	ACTTTGATTT	GCTTCCTAAC	AGCTCTGTTC
2470	2480	2490	2500	2520	2520
CCTCTGCTT	TGGTTTTAAT	AAATATTTTG	ATGACGTAA	AAAAAGGAAT	TCGATAT

FIG. 1B  
(CONTINUED)

00315116 051999

1 ttccggtttt tctcagggga cgttgaaatt atttttgtaa cgggagtcgg gagaggacgg  
 61 ggcgtgcccc ggcgtgcgcgc gcgtgcgtcct ccccggcgct cctccacagc tcgctggctc  
 121 ccgcccgcga aaggcgtcat gccgccc aaa acccccccga aaacggccgc caccgcccgc  
 181 gctgccgcgg cggaaccccc ggcaccgcgc ccgcccgcct ctcctgagga ggacccagag  
 241 caggacagcg gcccggagga cctgcctctc gtcaggcttg agtttgaaga aacagaagaa  
 301 cctgatttta ctgcattatg tcagaaatta aagataccag atcatgtcag agagagagct  
 361 tgggttaactt gggagaaaagt ttcattctgtg gatggagtat tgggagggtta tattcaaaag  
 421 aaaaaggaac tgtggggaat ctgtatcttt attgcagcag ttgacctaga tgagatgtcg  
 481 ttcacttttta ctgagctaca gaaaaacata gaaatcagtg tccataaatt cttaactta  
 541 ctaaaagaaa ttgataccag taccaaagtt gataatgcta tgtcaagact gttgaagaag  
 601 tatgatgtat tgtttgcact cttcagcaaa ttggaaaagga catgtgaact tatatatattg  
 661 acacaaccca gcagttcgat atctactgaa ataaattctg cattggtgct aaaagtttct  
 721 tggatcacat ttttattagc taaaggggaa gtattacaaa tgggaagatga tctggtgatt  
 781 tcatttctagt taatgctatg tgtccttgac tattttatta aactctcacc tcccatgttg  
 841 ctcaaagaac catataaaac agctgttata ccatttaattg gttcacctcg aacaccagag  
 901 cgagggtcaga acaggagtgc acggatagca aaacaactag aaaatgatac aagaattatt  
 961 gaagttctct gtaaagaaca tgaatgtaat atagatgagg tgaaaaatgt ttatttcaaa  
 1021 aattttatata cttttatgaa ttctcttgga cttgtaacat ctaatggact tccagagggt  
 1081 gaaaatcttt ctaaacgata cgaagaatt tatcttataa ataaagatct agatgcaaga  
 1141 ttatttttgg atcatgataa aactcttcag actgattcta tagacagttt tgaaacacag  
 1201 agaacaccac gaaaaagtaa ccttgatgaa gaggtgaatg taattcctcc acacactcca  
 1261 gttaggactg ttatgaacac tatccaacaa ttaatgatga ttttaaatc agcaagtgat  
 1321 caaccttcag aaaatctgat ttcctatttt aacaactgca cagtgaatcc aaaagaaagt  
 1381 attgtaaaaa gagtgaagga tataggatac atctttaaag agaaatttgc taaagctgtg  
 1441 ggacagggtt tggtcgaaat tggatcacag cgatacaaac ttggagttcg cttgtattac  
 1501 cgagtaaatg aatccatgct taaatcagaa gaagaacgat tatccattca aaattttagc  
 1561 aaacttctga atgacaacat ttttcatatg tctttatttg cgtgcgctct tgaggttgta  
 1621 atggccacat atagcagaag tacatctcag aactctgatt ctggaacaga tttgtcttct  
 1681 ccatggattc tgaatgtgct tgaattaaaa gcctttgatt ttacaaaagt gatcgaaagt  
 1741 tttatcaaaag cagaaggcaa cttgacaaga gaaatgataa aacattttaga acgatgtgaa  
 1801 catcgaatca tggaaatccct tgcattgctc tcagattcac ctttatttga tcttatttaa  
 1861 caatcaaaag accgagaagg accaactgat caccttgaat ctgcttgctc tcttaattct  
 1921 cctctccaga ataatcacac tgcagcagat atgtatcttt ctctgtgtaag atctccaaag  
 1981 aaaaaagggt caactacgcg tgtaaattct actgcaaatg cagagacaca agcaacctca  
 2041 gccttccaga cccagaagcc attgaaatct acctctcttt cactgtttta taaaaaagtg  
 2101 tatcggttag cctatctccg gctaaatata ctttgatgaa gccttctgtc tgagcaccca  
 2161 gaattagaac atatcatctg gacccttttc cagcacaccc tgcagaatga gtatgaactc  
 2221 atgagagaca ggcatttgga ccaaattatg atgtgttcca tgtatggcat atgcaaaagt  
 2281 aagaatatag accttaaatt caaaatcatt gtaacagcat acaaggatct tctcatgct  
 2341 gttcaggaga cattcaaacg tgttttgatc aaagaagagg agtatgattc tattatagta  
 2401 ttctataact cggctctcat gcagagactg aaacaaata ttttgagta tgcttccacc  
 2461 agggcccccta ccttgctcacc aatacctcag attcctcgaa gcccttaca gtttcttagt  
 2521 tcacccttac ggattcctgg agggaacatc tatatttcac ccctgaagag tccatataaa  
 2581 atttcagaag gtctgccaac accaacaata atgactccaa gatcaagaat cttagtatca  
 2641 attggtgaat cattcgggac ttctgagaag tccagaaaaa taaatcagat ggtatgtaac  
 2701 agcgaccgtg tgctcaaaag aagtgtgaa ggaagcaacc ctctaaacc cctgaaaaaa  
 2761 ctacgctttg atattgaagg atcagatgaa gcagatggaa gtaaacatct occaggagag  
 2821 tccaaatttc agcaaaact ggcagaaatg acttctactc gaacacgaat gcaaaagcag  
 2881 aaaatgaatg atagcatgga tacctcaaac aaggaagaga aatgaggatc tcaggacctt  
 2941 ggtggacact gtgtacacct ctggattcat tgtctctcac agatgtgact gtat

FIG. 2A

094516.05100  
000T50"ST5T50  
"MPPKTPRKTAATAAAAAAEPAPPPPPPEEDPEQDSGPEDLPL  
VRLEFEETEEPFTALCQKLKIPDHVRERAWLTWEKVSSVDGVLGGYIQKKKELWGIC  
IFIAAVDLDEMSFTFTTELQKNIEISVHKFFNLLKEIDTSTKVDNAMSRLKKYDVLFA  
LFSKLERTCELIYLTQPSSSISTEINSALVLKVSUITFLLAKGEVLQMEDDLVISFQL  
MLCVLDYFIKLSPPMLLKEPYKTAVIPINGSRPTPRRGQNRSARIAKQLENDTRIIEV  
LCKEHECNIDEVKNVYFKNFIPFMNSLGLVTSNGLPEVENLSKRYEEIYLNKNDLDAR  
LFLDHDKTLQTDSIDSFETQRTPRKSNLDEEVNVI PPHTPVRTVMNTIQQLMMILNSA  
SDQPSENLISYFNNCTVNPKESILKRVKDIFYIFKEKFAKAVGQGCVEIGSQRYKLG  
RLYYRVMESMLKSEEEERLSIQNFSLNDNIFHMSLLACALEVVMATYSRSTSONLDS  
GTDLSFPWILNVLNLKAFDFYKVIESFIKAEGNLTREMIKHLERCEHRIMESLAWLSD  
SPLFDLIKQSKDREGPTDHLESACPLNLPLQNNHTAADMYLSPVRSPKKKGSTTRVNS  
TANAETQATSAFQTQKPLKSTSLSLFYKKVYRLAYLRLNTLCERLLSEHPELEHIIWT  
LFQHTLQNEYELMRDRHLDQIMMCSMYGICKVKNIDLKFKIIVTAYKDLPHAVQETFK  
RVLIKEEYDSIIIVFYNSVFMQRLKTNILQYASTRPPTLSPIPHIPRSPYKFPSSPLR  
IPGGNIYISPLKSPYKISEGLPTPTKMTPRSRILVSIGESFGTSEKFQKINQMVCNSD  
RVLKRSAEGSNPPKPLKKLRFDIEGSDEADGSKHLPGESKFQKLAEMTSTRTRMQKQ  
KMNDSMDTSNKEEK"

FIG. 2B

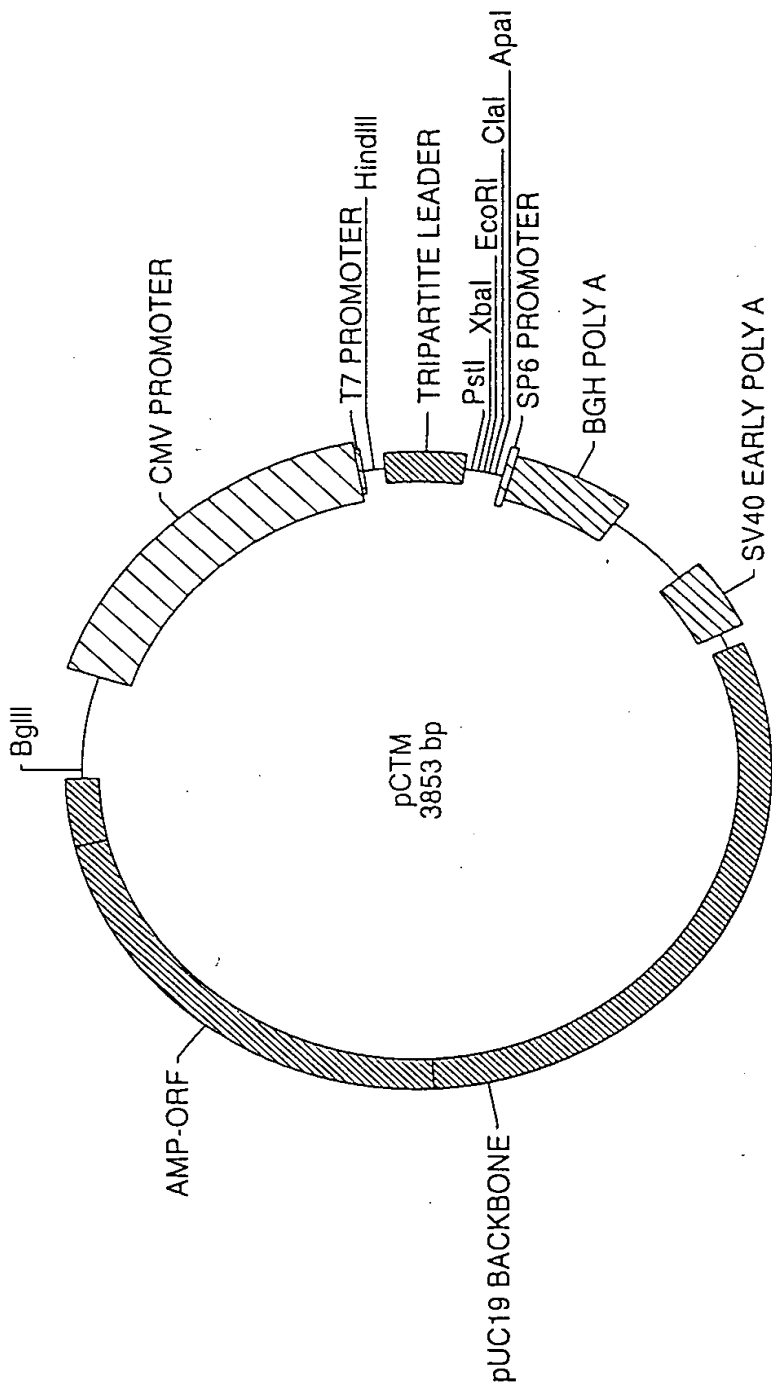


FIG. 3

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```

                                >HincII
                                |
                                >AccI
                                ||
                                >Sall
                                |||
                                |||
                                |||
    >BglIII
    |
    10 20 30 40 50 60
    *  *  *  *  *  *
GACGGATCGG GAGATCTCCC GATCCCCTAT GGTCTGACTCT CAGTACAATC TGCTCTGATG

                                >AlwNI
                                |
    70 80 90 100 110 120
    *  *  *  *  *  *
CCGCATAGTT AAGCCAGTAT CTGCTCCCTG CTTGTGTGTT GGAGGTCGCT GAGTAGTGCG

                                >ApoI
                                |
    130 140 150 160 170 180
    *  *  *  *  *  *
CGAGCAAAAT TTAAGCTACA ACAAGGCAAG GCTTGACCGA CAATTGCATG AAGAATCTGC

                                >MfeI
                                |
                                >HincII
                                |
                                >AflIII
                                |
                                >MluI
                                |
    190 200 210 220 230
    *  *  *  *  *
TTAGGGTTAG GCGTTTTCG CTGCTTCG CGA TGT ACG GGC CAG ATA TAC GCG TTG
    Arg Cys Thr Gly Gln Ile Tyr Ala Leu>
    _d_d_CMV PROMOTER_d_d_>

                                >SpeI
                                |
                                >AseI
                                |
    240 250 260 270 280
    *  *  *  *  *
ACA TTG ATT ATT GAC TAG TTA TTA ATA GTA ATC AAT TAC GGG GTC ATT
Thr Leu Ile Ile Asp *** Leu Leu Ile Val Ile Asn Tyr Gly Val Ile>
_d_d_d_d_d_CMV PROMOTER_d_d_d_d_d_>

    290 300 310 320 330
    *  *  *  *  *
AGT TCA TAG CCC ATA TAT GGA GTT CCG CGT TAC ATA ACT TAC GGT AAA
Ser Ser *** Pro Ile Tyr Gly Val Pro Arg Tyr Ile Thr Tyr Gly Lys>
_d_d_d_d_d_CMV PROMOTER_d_d_d_d_d_>

                                >BglI
                                |
                                >AatII
                                |
    340 350 360 370
    *  *  *  *
TGG CCC GCC TGG CTG ACC GCC CAA CGA CCC CCG CCC ATT GAC GTC AAT
Trp Pro Ala Trp Leu Thr Ala Gln Arg Pro Pro Pro Ile Asp Val Asn>
_d_d_d_d_d_CMV PROMOTER_d_d_d_d_d_>

    380 390 400 410 420
    *  *  *  *  *
AAT GAC GTA TGT TCC CAT AGT AAC GCC AAT AGG GAC TTT CCA TTG ACG
Asn Asp Val Cys Ser His Ser Asn Ala Asn Arg Asp Phe Pro Leu Thr>
_d_d_d_d_d_CMV PROMOTER_d_d_d_d_d_>

```

FIG. 4

FIG. 4  
(CONTINUED)



FIG. 4  
(CONTINUED)

[illegible]

FIG. 4  
(CONTINUED)

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```

>BpmI
|
>SV40_early_poly_A
|
1510      1520      1530      1540      1550      1560
*         *         *         *         *         *
CATGCTGGAG TTCTTCGCCC ACCCCAAC TT GTTTATTGCA GCTTATAATG GTTACAAATA

>ApoI
|
1570      1580      1590      1600      1610      1620
*         *         *         *         *         *
AAGCAATAGC ATCACAAATT TCACAAATAA AGCATT TTTT TCACTGCATT CTAGTTGTGG

>HincII
|
>Bst1107I >AccI
|         |
>AccI >SalI
|         |
1630      1640      1650      1660      1670      1680
*         *         *         *         *         *
TTTGTCCAAA CTCATCAATG TATCTTATCA TGTCTGTATA CCGTCGACCT CTAGCTAGAG
>
>BsrBI
|
1690      1700      1710      1720      1730      1740
*         *         *         *         *         *
CTTGGCGTAA TCATGGTCAT AGCTGTTTCC TGTGTGAAAT TGTTATCCGC TCACAATTCC
c PUC19 BACKBONE H3 TO AATII c
>
>BamI
|
1750      1760      1770      1780      1790      1800
*         *         *         *         *         *
ACACAACATA CGAGCCGGAA GCATAAAGTG TAAAGCCTGG GGTGCCTAAT GAGTGAGCTA
c PUC19 BACKBONE H3 TO AATII c
>
>AseI
|
1810      1820      1830      1840      1850      1860
*         *         *         *         *         *
ACTCACATTA ATTGCGTTGC GCTCACTGCC CGCTTTCCAG TCGGGAAACC TGTCGTGCCA
c PUC19 BACKBONE H3 TO AATII c
>
>PvuII
|
>MspAI >AseI >EaeI >HaeII
|         |         |         |
1870      1880      1890      1900      1910      1920
*         *         *         *         *         *
GCTGCATTAA TGAATCGGCC AACGCGCGGG GAGAGGCGGT TTGCGTATTG GGCGCTCTTC
c PUC19 BACKBONE H3 TO AATII c
>
>EaeI
|
>SapI >BsiEI >BsrBI
|         |         |
1930      1940      1950      1960      1970      1980
*         *         *         *         *         *
CGCTTCCTCG CTCCTGACT CGCTGCGCTC GGTCGTTCCG CTGCGGCGAG CGGTATCAGC
c PUC19 BACKBONE H3 TO AATII c
>

```

FIG. 4  
(CONTINUED)

[illegible]

FIG. 4  
(CONTINUED)

(CONTINUED)

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      2530      2540      2550      2560      2570      2580
      *      *      *      *      *      *
CTACGGCTAC ACTAGAAGGA CAGTATTTGG TATCTGCGCT CTGCTGAAGC CAGTTACCTT
_____c_____PUC19 BACKBONE H3 TO AATII_____c_____>

>Eco57I
|
| 2590      2600      2610      2620      2630      2640
| *      *      *      *      *      *
CGGAAAAAGA GTTGGTAGCT CTTGATCCGG CAAACAAACC ACCGCTGGTA GCGGTGGTTT
_____c_____PUC19 BACKBONE H3 TO AATII_____c_____>

      2650      2660      2670      2680      2690      2700
      *      *      *      *      *      *
TTTTGTTTGC AAGCAGCAGA TTACGCGCAG AAAAAAAGGA TCTCAAGAAG ATCCTTTGAT
_____c_____PUC19 BACKBONE H3 TO AATII_____c_____>

>BspHI
|
| 2710      2720      2730      2740      2750      2760
| *      *      *      *      *      *
CTTTTCTACG GGGTCTGACG CTCAGTGGAA CGAAACTCA CGTTAAGGGA TTTTGGTCAT
_____c_____PUC19 BACKBONE H3 TO AATII_____c_____>

>DraI
|
| 2770      2780      2790      2800      2810      2820
| *      *      *      *      *      *
GAGATTATCA AAAAGGATCT TCACCTAGAT CCTTTTAAAT TAAAAATGAA GTTTTAAATC
_____c_____PUC19 BACKBONE H3 TO AATII_____c_____>

>BamI
|
| 2830      2840      2850      2860      2870      2880
| *      *      *      *      *      *
AATCTAAAGT ATATATGAGT AAACCTGGTC TGACAGTTAC CAATGCTTAA TCAGTGAGGC
_____c_____PUC19 BACKBONE H3 TO AATII_____c_____>
a_____AMP-ORF_____>

>AhdI
|
| 2890      2900      2910      2920      2930      2940
| *      *      *      *      *      *
ACCTATCTCA GCGATCTGTC TATTTTCGTC ATCCATAGTT GCCTGACTCC CCGTCGTGTA
_____a_____a_____AMP-ORF_____a_____a_____>
_____c_____PUC19 BACKBONE H3 TO AATII_____c_____>

>BsaI
|
| 2950      2960      2970      2980      2990      3000
| *      *      *      *      *      *
GATAACTACG ATACGGGAGG GCTTACCATC TGGCCCCAGT GCTGCAATGA TACCGCGAGA
_____a_____a_____AMP-ORF_____a_____a_____>
_____c_____PUC19 BACKBONE H3 TO AATII_____c_____>

>BsrFI
|
| 3010      3020      3030      3040      3050      3060
| *      *      *      *      *      *
CCCACGCTCA CCGGCTCCAG ATTTATCAGC AATAAACCCAG CCAGCCGGAA GGGCCGAGCG
_____a_____a_____AMP-ORF_____a_____a_____>
_____c_____PUC19 BACKBONE H3 TO AATII_____c_____>

```

FIG. 4  
(CONTINUED)

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                                >AseI
                                |
      3070      3080      3090      3100      3110      3120
      *      *      *      *      *      *
CAGAAGTGGT CCTGCAACTT TATCCGCTC CATCCAGTCT ATTAATTGTT GCCGGGAAGC
      a      a      AMP-ORF      a      a      >
      c      PUC19 BACKBONE H3 TO AATII      c      >

                                >PspI406I
                                |
                                >FspI      >BsrDI      >Sfcl
      3130      3140      3150      3160      3170      3180
      *      *      *      *      *      *
TAGAGTAAGT AGTTCGCCAG TTAATAGTTT GCGCAACGTT GTTGCCATTG CTACAGGCAT
      a      a      AMP-ORF      a      a      >
      c      PUC19 BACKBONE H3 TO AATII      c      >

                                >BsaWI
                                |
                                >MslI
      3190      3200      3210      3220      3230      3240
      *      *      *      *      *      *
CGTGGTGTCa CGCTCGTCGT TTGGTATGGC TTCATTGAGC TCCGGTCCCG AACGATCAAG
      a      a      AMP-ORF      a      a      >
      c      PUC19 BACKBONE H3 TO AATII      c      >

                                >PvuI
                                |
                                >BsiEI
      3250      3260      3270      3280      3290      3300
      *      *      *      *      *      *
GCGAGTTACA TGATCCCCCA TGTGTGCAA AAAAGCGGTT AGCTCCTTCG GTCCTCCGAT
      a      a      AMP-ORF      a      a      >
      c      PUC19 BACKBONE H3 TO AATII      c      >

                                >EaeI      >MslI
                                |      |
      3310      3320      3330      3340      3350      3360
      *      *      *      *      *      *
CGTTGTCAGA AGTAAGTTGG CCGCAGTGT ATCACTCATG GTTATGGCAG CACTGCATAA
      a      a      AMP-ORF      a      a      >
      c      PUC19 BACKBONE H3 TO AATII      c      >

                                >ScaI
                                |
      3370      3380      3390      3400      3410      3420
      *      *      *      *      *      *
TTCTCTTACT GTCATGCCAT CCGTAAGATG CTTTCTGTG ACTIGGTGAGT ACTCAACCAA
      a      a      AMP-ORF      a      a      >
      c      PUC19 BACKBONE H3 TO AATII      c      >

                                >BsiEI
                                |
      3430      3440      3450      3460      3470      3480
      *      *      *      *      *      *
GTCATTCTGA GAATAGTGTA TCGGCGGACC GAGTTGCTCT TGCCCGGCGT CAATACGGGA
      a      a      AMP-ORF      a      a      >
      c      PUC19 BACKBONE H3 TO AATII      c      >

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FIG. 4  
(CONTINUED)

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                                >XmnI
                                |
                                >DraI   >BsiHKAI   >Psp1406I
                                |       |       |
                                3490   3500   3510   3520   3530   3540
                                *       *       *       *       *       *
TAATACCGCG CCACATAGCA GAACTTTAAA AGTGCTCATC ATTGGAAAAC GTTCTTCGGG
a_____a_____AMP-ORF_____a_____a_____>
c_____PUC19 BACKBONE H3 TO AATII_____c_____>

                                >Eco571
                                |
                                >ApaLI
                                |
                                >MspAlI   >BssSI
                                |       |
                                3550   3560   3570   3580   3590   3600
                                *       *       *       *       *       *
GCGAAAACTC TCAAGGATCT TACCGCTGTT GAGATCCAGT TCGATGTAAC CCACTCGTGC
a_____a_____AMP-ORF_____a_____a_____>
c_____PUC19 BACKBONE H3 TO AATII_____c_____>

>BsiHKAI
|
|   3610   3620   3630   3640   3650   3660
|   *       *       *       *       *       *
ACCCAAGTGA TCTTCAGCAT CTTTACTTT CACCAGCGTT TCTGGGTGAG CAAAAACAGG
a_____a_____AMP-ORF_____a_____a_____>
c_____PUC19 BACKBONE H3 TO AATII_____c_____>

                                >MslI
                                |
                                3670   3680   3690   3700   3710   3720
                                *       *       *       *       *       *
AAGGCAAAAT GCCGCAAAA AGGGAATAAG GCGACACGG AAATGTTGAA TACTCATACT
a_____a_____AMP-ORF_____a_____a_____>
c_____PUC19 BACKBONE H3 TO AATII_____c_____>

>EarI   >SspI   >BspHI   >BsrBI
|       |       |       |
|   3730   3740   3750   3760   3770   3780
|   *       *       *       *       *       *
CTTCCTTTTT CAATATTATT GAAGCATTTA TCAGGGTTAT TGTCTCATGA GCGGATACAT
c_____PUC19 BACKBONE H3 TO AATII_____c_____>

                                3790   3800   3810   3820   3830   3840
                                *       *       *       *       *       *
ATTTGAATGT ATTTAGAAAA ATAAACAAAT AGGGGTTCCG CGCACATTTC CCCGAAAAGT
c_____PUC19 BACKBONE H3 TO AATII_____c_____>

>HincII
|
>AccI
||
>AatII
||
>SalI
|||
3850 |||
*   *   |||
GCCACCTGAC GTC
c_____>

```

FIG. 4  
(CONTINUED)

556T50"344669

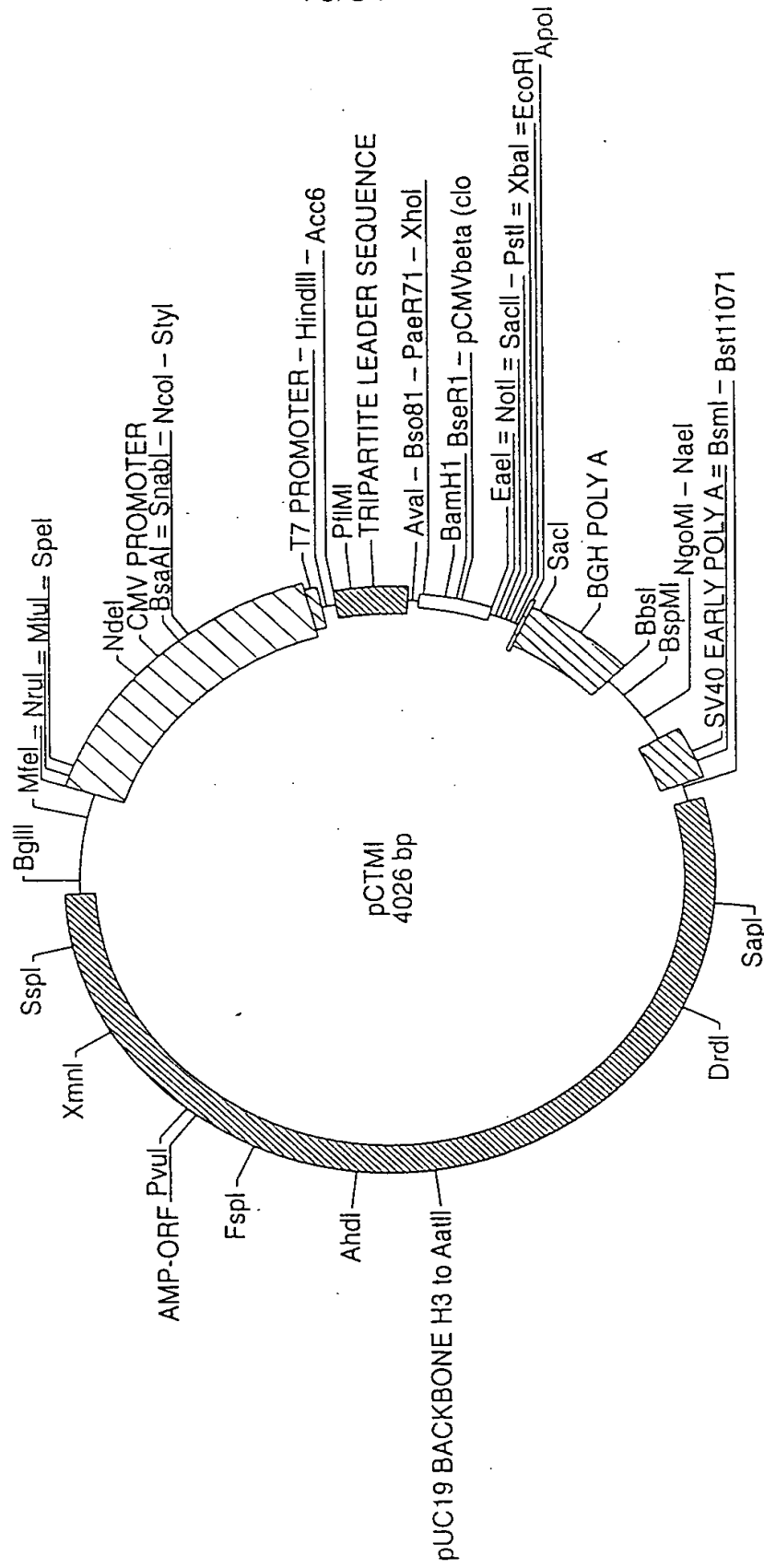


FIG. 5



1. *Chlorophyll* *a* and *b* contents were determined using a spectrophotometer (Shimadzu UV-160U) at 663 nm and 646 nm, respectively. The total chlorophyll content was calculated using the following formula:  $\text{Total Chlorophyll} = \frac{12.7 \times \text{Abs}_{663} + 22.9 \times \text{Abs}_{646}}{1000}$ .

FIG. 6

FIG. 6  
(CONTINUED)

FIG. 6  
(CONTINUED)

FIG. 6  
(CONTINUED)

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```

>HincII
|
>HpaI
|
1100 | 1110 | 1120 | 1130 | 1140 | 1150
*   *   *   *   *   *   *   *
ACCAGAAAGT TAACTGGTAA GTTAGTCTT TTTGTCTTTT TATTTTCAGGT CCCGGATCCG
b HYBRID SV40 LATE INTRON b >

>BseRI
|
1160 | 1170 | 1180 | 1190 | 1200 | 1210
*   *   *   *   *   *   *   *
GTGGTGGTGC AAATCAAAGA ACTGCTCCTC AGTGGATGTT GCCTTTACTT CTAGGCCTGT
b HYBRID SV40 LATE INTRON b >

>BsiEI
|
>EagI
|
>EaeI
|
>SacII
|
>NotI
|
1220 | 1230 | 1240 | 1250 | 1260 | 1270
*   *   *   *   *   *   *   *
ACGGAAGTGT TACTTCTGCT CTAAAAGCTG CGGAATTGTA CCCGCGGCCG CTGCAGTCTA
b HYBRID SV40 LATE INTRON b >

>ApaI
|
>BspDI
|
>EcoRV
|
>Bsp120I
|
>ApoI
|
>EcoRI
|
1280 | 1290 | 1300 | 1310 | 1320
*   *   *   *   *
GACGAATTCG CGTACGATAT CGATGGGCCC TATT CTA TAG TGT CAC CTA AAT
Leu *** Cys His Leu Asn>
c_SP6 PROMOTER c >

>SacI
|
>BanII
|
>BsiHKAI
|
>Ecl136II
|
>BclI
|
>BGH_POLY_A
|
1330 | 1340 | 1350 | 1360 | 1370 | 1380
*   *   *   *   *   *
GCTAGAGC TCGCTGATCA GCCTCGACTG TGCCTTCTAG TTGCCAGCCA TCTGTTGTTT

>BanI
|
1390 | 1400 | 1410 | 1420 | 1430 | 1440
*   *   *   *   *   *
GCCCCCTCCCC CGTGCCTTCC TTGACCCTGG AAGGTGCCAC TCCCACTGTC CTTTCCTAAT

```

FIG. 6  
(CONTINUED)

004546 051000

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```

      1450      1460      1470      1480      1490      1500
      *      *      *      *      *      *
AAAATGAGGA AATTGCATCG CATTGTCTGA GTAGGTGTCA TTCTATTCTG GGGGGTGGGG

                                >BbsI
                                |
      1510      1520      1530      1540      1550      1560
      *      *      *      *      *      *
TGGGGCAGGA CAGCAAGGGG GAGGATTGGG AAGACAATAG CCGAAATGAC CGACCAAGCG

      >BspMI
      |
      >BssSI
      |
      1570      1580      1590      1600      1610      1620
      *      *      *      *      *      *
ACGCCCAACC TGCCATCACG AGATTTCGAT TCCACGCCG CCTTCTATGA AAGGTTGGGC

                                >NaeI
                                |
                                >NgoMI
                                ||
                                >BpmI
                                ||
                                >BsrFI
                                |||
      1630      1640      1650      1660      1670      1680
      *      *      *      *      *      *
TTCGGAATCG TTTTCCGGGA CGCCGGCTGG ATGATCCTCC AGCGCCGGGA TCTCATGCTG

                                >BpmI
                                |
                                >SV40_early_poly_A
                                |
      1690      1700      1710      1720      1730      1740
      *      *      *      *      *      *
GAGTTCTTCG CCCACCCCAA CTTGTTTATT GCAGCTTATA ATGGTTACAA ATAAAGCAAT

      >ApoI                                >BsmI
      |                                |
      1750      1760      1770      1780      1790      1800
      *      *      *      *      *      *
AGCATCACAA ATTTACAAA TAAAGCATT TTTTCACTGC ATTCTAGTTG TGGTTTGTCC

                                >HincII
                                |
                                >Bst1107I  >AccI
                                |    ||
                                >AccI  >SalI
                                ||    |||
      1810      1820      1830      1840      1850      1860
      *      *      *      *      *      *
AAACTCATCA ATGTATCTTA TCATGTCTGT ATACCGTCGA CCTCTAGCTA GAGCTTGGCG>

                                >BsrBI
                                |
      1870      1880      1890      1900      1910      1920
      *      *      *      *      *      *
TAATCATGGT CATAGCTGTT TCCTGTGTGA AATTGTTATC CGCTCACAAT TCCACACAAC
      d_____d_____PUC19 BACKBONE_____d_____d_____>

```

FIG. 6  
(CONTINUED)

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```

                                >BamI
                                |
      1930      1940      1950      1960      1970      1980
      *        *        *        *        *        *
ATACGAGCCG GAAGCATAAA GTGTAAAGCC TGGGGTGCCT AATGAGTGAG CTAAGTCACA
      d      d      PUC19 BACKBONE      d      d      >
                                >AseI
                                |
>AseI      |      >PvuII      |
      1990      2000      2010      2020      2030      2040
      *        *        *        *        *        *
TTAATTGCGT TCGGCTCACT GCCCGCTTTC CAGTCGGGAA ACCTGTCGTG CCAGCTGCAT
      d      d      PUC19 BACKBONE      d      d      >
                                >EaeI      >HaeII      >SapI
                                |      |      |
      2050      2060      2070      2080      2090      2100
      *        *        *        *        *        *
TAATGAATCG GCCAACGCGC GGGGAGAGGC GGTTCGCGTA TTGGGCGCTC TTCCGCTTCC
      d      d      PUC19 BACKBONE      d      d      >
                                >BsiEI      >BsrBI
                                |      |
      2110      2120      2130      2140      2150      2160
      *        *        *        *        *        *
TCGCTCACTG ACTCGCTGCG CTCGGTCGTT CGGCTGCGGC GAGCGGTATC AGCTCACTCA
      d      d      PUC19 BACKBONE      d      d      >
                                >AflIII
                                |
      2170      2180      2190      2200      2210      2220
      *        *        *        *        *        *
AAGGCGGTAA TACGGTTATC CACAGAATCA GGGGATAACG CAGGAAAGAA CATGTGAGCA
      d      d      PUC19 BACKBONE      d      d      >
      2230      2240      2250      2260      2270      2280
      *        *        *        *        *        *
AAAGGCCAGC AAAAGGCCAG GAACCGTAAA AAGGCCGCGT TGCTGGCGTT TTTCCATAGG
      d      d      PUC19 BACKBONE      d      d      >
                                >DrdI
                                |
      2290      2300      2310      2320      2330      2340
      *        *        *        *        *        *
CTCCGCCCCC CTGACGAGCA TCACAAAAT CGACGCTCAA GTCAGAGGTG GCGAAACCCG
      d      d      PUC19 BACKBONE      d      d      >
                                >BssSI
                                |
      2350      2360      2370      2380      2390      2400
      *        *        *        *        *        *
ACAGGACTAT AAAGATACCA GCGGTTTCCC CCTGGAAGCT CCCTCGTGCG CTCTCCTGTT
      d      d      PUC19 BACKBONE      d      d      >

```

FIG. 6  
(CONTINUED)

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```

                >BsaWI                      >HaeII
                |                          |
      2410      2420      2430      2440      2450      2460
      *      *      *      *      *      *
      CCGACCCTGC CGCTTACCGG ATACCTGTCC GCCTTTCTCC CTTGCGGAAG CGTGGCGCTT
      _____d_____d_____PUC19 BACKBONE_____d_____d_____>

                >SfcI
                |
      2470      2480      2490      2500      2510      2520
      *      *      *      *      *      *
      TCTCAATGCT CACGCTGTAG GTATCTCAGT TCGGTGTAGG TCGTTCGCTC CAAGCTGGGC
      _____d_____d_____PUC19 BACKBONE_____d_____d_____>

      >BsiHKAI
      |
    >ApaLI      |
      |          |
      2530      2540      2550      2560      2570      2580
      *      *      *      *      *      *
      TGTGTGCACG AACCCCCCGT TCAGCCCGAC CGCTGCGCCT TATCCGGTAA CTATCGTCTT
      _____d_____d_____PUC19 BACKBONE_____d_____d_____>

                                >AlwNI
                                |
      2590      2600      2610      2620      2630      2640
      *      *      *      *      *      *
      GAGTCCAACC CCGTAAGACA CGACTTATCG CCACTGGCAG CAGCCACTGG TAACAGGATT
      _____d_____d_____PUC19 BACKBONE_____d_____d_____>

                >SfcI
                |
      2650      2660      2670      2680      2690      2700
      *      *      *      *      *      *
      AGCAGAGCGA GGTATGTAGG CGGTGCTACA GAGTTCTTGA AGTGGTGGCC TAACTACGGC
      _____d_____d_____PUC19 BACKBONE_____d_____d_____>

                                >Eco57I
                                |
      2710      2720      2730      2740      2750      2760
      *      *      *      *      *      *
      TACACTAGAA GGACAGTATT TGGTATCTGC GCTCTGCTGA AGCCAGTTAC CTTGCGAAAA
      _____d_____d_____PUC19 BACKBONE_____d_____d_____>

      2770      2780      2790      2800      2810      2820
      *      *      *      *      *      *
      AGAGTTGGTA GCTCTTGATC CGGCAAACAA ACCACCGCTG GTAGCGGTGG TTTTTTGTG
      _____d_____d_____PUC19 BACKBONE_____d_____d_____>

      2830      2840      2850      2860      2870      2880
      *      *      *      *      *      *
      TGCAAGCAGC AGATTACGCG CAGAAAAAAA GGATCTCAAG AAGATCCTTT GATCTTTTCT
      _____d_____d_____PUC19 BACKBONE_____d_____d_____>

                                >BspHI
                                |
      2890      2900      2910      2920      2930      2940
      *      *      *      *      *      *
      ACGGGGTCTG ACGCTCAGTG GAACGAAAC TCACGTTAAG GGATTTTGGT CATGAGATTA
      _____d_____d_____PUC19 BACKBONE_____d_____d_____>

```

FIG. 6  
(CONTINUED)

001515.05100

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```

                                >DraI
                                |
      2950      2960      2970      2980      2990      3000
      *      *      *      *      *      *
TCAAAAAGGA TCTTCACCTA GATCCTTTTA AATTAAAAAT GAAGTTTTAA ATCAATCTAA
      d      d      PUC19 BACKBONE      d      d
                                >BanI
                                |
      3010      3020      3030      3040      3050      3060
      *      *      *      *      *      *
AGTATATATG AGTAAACTTG GTCTGACAGT TACCAATGCT TAATCAGTGA GGCACCTATC
      d      d      PUC19 BACKBONE      d      d
                                >AhdI
                                |
      3070      3080      3090      3100      3110      3120
      *      *      *      *      *      *
TCAGCGATCT GTCTATTTTCG TTCATCCATA GTTGCTGAC TCCCCGTCGT GTAGATAACT
      a      a      AMP-ORF      a      a
      d      d      PUC19 BACKBONE      d      d
                                >BsaI
                                |
                                >BsrDI
                                |
                                >BpmI
      3130      3140      3150      3160      3170      3180
      *      *      *      *      *      *
ACGATACGGG AGGGCTTACC ATCTGGCCCC AGTGCTGCAA TGATACCGCG AGACCCACGC
      a      a      AMP-ORF      a      a
      d      d      PUC19 BACKBONE      d      d
                                >BsrFI
                                |
                                >BglI
      3190      3200      3210      3220      3230      3240
      *      *      *      *      *      *
TCACCGGCTC CAGATTTATC AGCAATAAAC CAGCCAGCCG GAAGGGCCGA GCGCAGAAGT
      a      a      AMP-ORF      a      a
      d      d      PUC19 BACKBONE      d      d
                                >AseI
                                |
      3250      3260      3270      3280      3290      3300
      *      *      *      *      *      *
GGTCCTGCAA CTTTATCCGC CTCCATCCAG TCTATTAATT GTTGCCGGGA AGCTAGAGTA
      a      a      AMP-ORF      a      a
      d      d      PUC19 BACKBONE      d      d
                                >Psp1406I
                                |
                                >FspI
                                |
                                >BsrDI
                                |
                                >SfcI
                                |
                                >MslI
      3310      3320      3330      3340      3350      3360
      *      *      *      *      *      *
AGTAGTTCGC CAGTTAATAG TTTGCGCAAC GTTGTGCGCA TTGCTACAGG CATCGTGGTG
      a      a      AMP-ORF      a      a
      d      d      PUC19 BACKBONE      d      d

```

FIG. 6  
(CONTINUED)

66T59"9T599



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```

                                >BsaWI
      3370      3380      3390      3400      3410      3420
      *      *      *      *      *      *
TCACGCTCGT CGTTTGGTAT GGCTTCATTC AGCTCCGGTT CCCAACGATC AAGGCGAGTT
      a      a      AMP-ORF      a      a
      d      d      PUC19 BACKBONE      d      d
                                >BsiEI
                                |
                                >PvuI
      3430      3440      3450      3460      3470      3480
      *      *      *      *      *      *
ACATGATCCC CCATGTTGTG CAAAAAGCG GTTAGCTCCT TCGGTCCTCC GATCGTTGTC
      a      a      AMP-ORF      a      a
      d      d      PUC19 BACKBONE      d      d
                                >EaeI
                                |
                                >MslI
      3490      3500      3510      3520      3530      3540
      *      *      *      *      *      *
AGAAGTAAGT TGGCCGCGAGT GTTATCACTC ATGTTATGG CAGCACTGCA TAATTCTCTT
      a      a      AMP-ORF      a      a
      d      d      PUC19 BACKBONE      d      d
                                >ScaI
                                |
      3500      3560      3570      3580      3590      3600
      *      *      *      *      *      *
ACTGTCATGC CATCCGTAAG ATGCTTTTCT GTGACTGGTG AGTACTCAAC CAAGTCATTC
      a      a      AMP-ORF      a      a
      d      d      PUC19 BACKBONE      d      d
                                >BsiEI
                                |
      3610      3620      3630      3640      3650      3660
      *      *      *      *      *      *
TGAGAATAGT GTATGCGGCG ACCGAGTTGC TCTTGCCCGG CGTCAATACG GGATAATACC
      a      a      AMP-ORF      a      a
      d      d      PUC19 BACKBONE      d      d
                                >Psp1406I
                                |
                                >DraI
                                |
                                >BsiHKAI
                                |
                                >XmnI
      3670      3680      3690      3700      3710      3720
      *      *      *      *      *      *
GCGCCACATA GCAGAACTTT AAAAGTGCTC ATCATTGGAA AACGTTCTTC GGGGCGAAAA
      a      a      AMP-ORF      a      a
      d      d      PUC19 BACKBONE      d      d
                                >ApaLI
                                |
                                >Eco57I
                                |
                                >BssSI
                                |
                                >BsiHKAI
      3730      3740      3750      3760      3770      3780
      *      *      *      *      *      *
CTCTCAAGGA TCTTACCGCT GTTGAGATCC AGTTTCGATGT AACCCACTCG TGCACCCAAC
      a      a      AMP-ORF      a      a
      d      d      PUC19 BACKBONE      d      d

```

FIG. 6  
(CONTINUED)

00444-00400

FIG. 6  
(CONTINUED)

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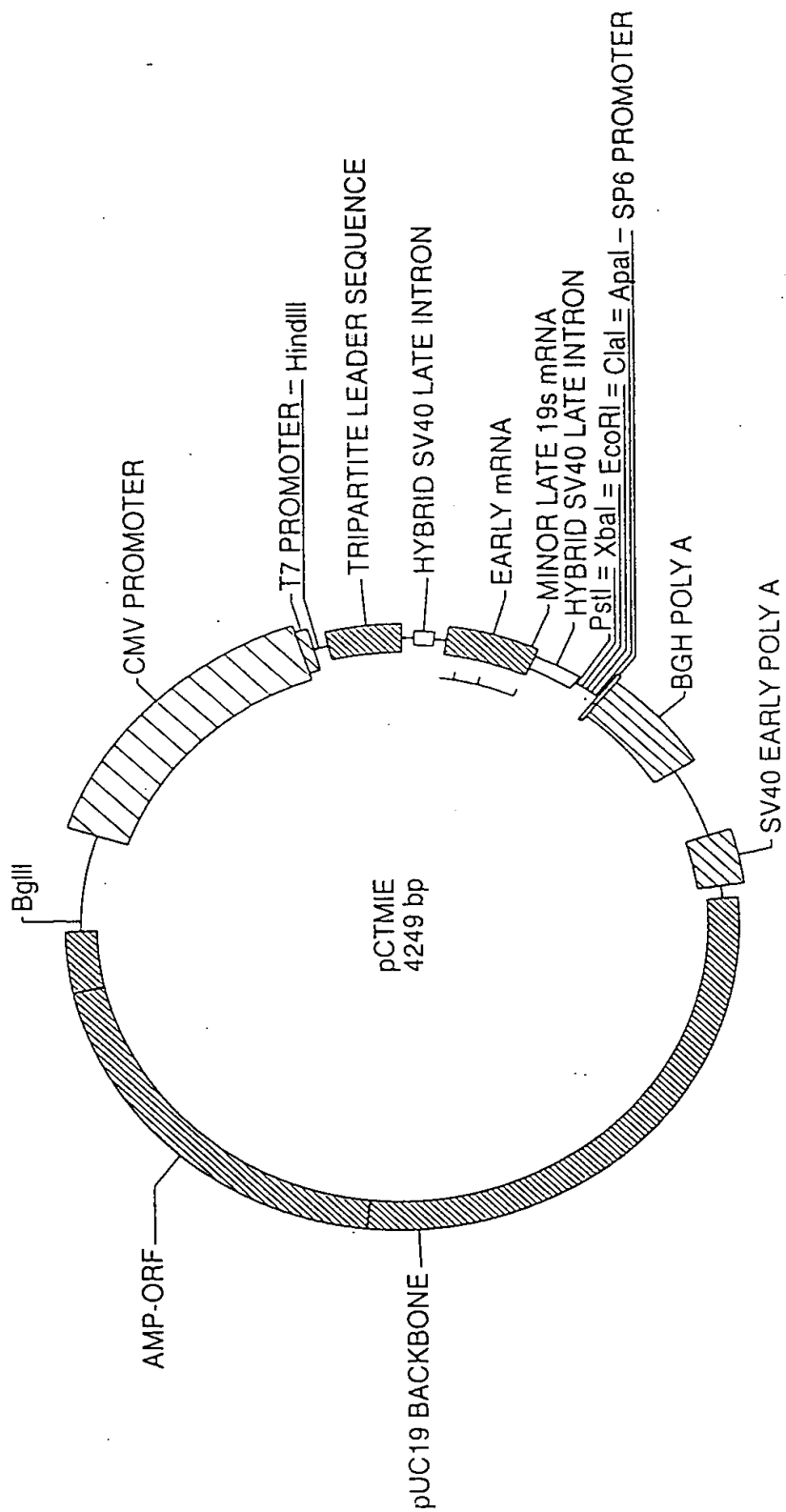


FIG. 7

FIG. 8

FIG. 8  
(CONTINUED)

FIG. 8  
(CONTINUED)

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```

_____TRIPARTITE LEADER SEQUENCE_____g____>
      >HpaI
      |
      >HincII
      |
      1100      1110      1120      1130      1140      1150
      *        *        *        *        *        *
ACCAGAAAGT TAACTGGTAA GTTTAGTCTT TTTGTCTTTT TATTTTCAGGT CCCGGATCTG
      b_____HYBRID SV40 LATE INTRON_b_____>

      >PpuMI
      |
      >EcoO109I
      |
      1160      1170      1180      1190      1200      1210
      *        *        *        *        *        *
AGTTAGGGCG GGACATGGGC GGAGTTAGGG GCGGGACTAT GGTGCTGAC TAATTGAGAT
      <_____h_____h_____EARLY MRNA_____h_____>

      >SphI
      |
      >NsiI
      |
      <72_bp_tandem_repeat_enhancer_sequence_
      |
      1220      1230      1240      1250      1260      1270
      *        *        *        *        *        *
GCATGCTTTG CATACTTCTG CCTGCTGGGG AGCCTGGGGA CTTTCCACAC CTGGTTGCTG
      <_____h_____h_____EARLY MRNA_____h_____h_____>

      >NsiI
      |
      >Ppu10I
      |
      1280      1290      1300      1310      1320      1330
      *        *        *        *        *        *
ACTAATTGAG ATGCATGCTT TGCATACTTC TGCCTGCTGG GGAGCCTGGG GACTTCCAC
      <_____h_____h_____EARLY MRNA_____h_____h_____>

      >PvuII
      |
      >BsaWI
      |
      >BseRI
      |
      <72_bp_tandem_repeat_enhancer_sequence_B_
      |
      <T_antigen_binding_site_II_
      |
      1340      1350      1360      1370      1380      1390
      *        *        *        *        *        *
ACCCTAACTG ACACACATTC CACAGCTGGT TCTTTCAGAT CCGGTGGTGG TGCAAATCAA
      _____HYBRID SV40_____>
      <_____h_____EARLY MRNA_____h_____
      _____MINOR LATE 19S_____>

      >StuI
      |
      1400      1410      1420      1430      1440      1450
      *        *        *        *        *        *
AGAACTGCTC CTCAGTGGAT GTTGCTTTA CTTCTAGGCC TGTACGGAAG TGTTACTTCT
      _____c_____HYBRID SV40 LATE INTRON_____c_____>

```

FIG. 8  
(CONTINUED)

>BsiEI  
 |  
 >NotI |  
 |  
 >EaeI | >XbaI  
 | |  
 >SacII | >PstI >EcoRI  
 | | |  
 >EagI | >SfcI | >ApoI >BsiWI  
 | | | |  
 1460 1470 1480 1490 1500 1510  
 \* \* \* \* \*  
 GCTCTAAAAG CTGCGGAATT GTACCCGCGG CCGCTGCAGT CTAGACGAAT TCGCGTACGA  
 \_\_\_\_\_ HYBRID SV40 LATE INT \_\_\_\_\_>

>ApaI  
 |  
 >BspDI >BanII  
 | |  
 >ClaI >Eco0109I  
 | |  
 >EcoRV | >Bsp120I >SfcI >MslI >Ecl136II >BclI  
 | | | | | | | |
 | | | | | >BGH\_POLY\_A | | |  
 | | | | | | |  
 1520 1530 1540 1550 1560  
 \* \* \* \* \*  
 TATCGATGGG CCCTATT CTA TAG TGT CAC CTA AAT GCTAG AGCTCGCTGA  
 Leu \*\*\* Cys His Leu Asn>  
 \_\_\_\_\_d\_SP6 PROMOTER\_\_\_\_\_d\_\_\_\_>

1570 1580 1590 1600 1610 1620  
 \* \* \* \* \*  
 TCAGCCTCGA CTGTGCCTTC TAGTTGCCAG CCATCTGTTG TTTGCCCTC CCCCCTGCCT

>BanI  
 |  
 1630 1640 1650 1660 1670 1680  
 \* \* \* \* \*  
 TCCTTGACCC TGGAAGGTGC CACTCCCACT GTCCTTTCCT AATAAAATGA GGAAATTGCA

1690 1700 1710 1720 1730 1740  
 \* \* \* \* \*  
 TCGCATTGTC TGAGTAGGTG TCATTCTATT CTGGGGGGTG GGGTGGGGCA GGACAGCAAG

>BspMI  
 |  
 >BbsI  
 |  
 1750 1760 1770 1780 1790 1800  
 \* \* \* \* \*  
 GGGGAGGATT GGGAAGACAA TAGCCGAAAT GACCGACCAA GCGACGCCCA ACCTGCCATC

1810 1820 1830 1840 1850 1860  
 \* \* \* \* \*  
 ACGAGATTTC GATTCCACCG CCGCCTTCTA TGAAAGGTTG GGCTTCGGAA TCGTTTTCCG

FIG. 8  
(CONTINUED)



```

>NaeI
|
>BpmI
|
>BsrFI
|
NcoMI
|
1870      1880      1890      1900      1910      1920
* | *      * | *      * | *      * | *      * | *
GGACGCCGGC TGGATGATCC TCCAGCGCGG GGATCTCATG CTGGAGTTCT TCGCCCACCC

>BpmI
|
>SV40_early_poly_A
|
1930      1940      1950      1960      1970      1980
* | *      * | *      * | *      * | *      * | *
CAACTTGTTT ATTGCAGCTT ATAATGGTTA CAAATAAAGC AATAGCATCA CAAATTTTAC

>BsmI
|
1990      2000      2010      2020      2030      2040
* | *      * | *      * | *      * | *      * | *
AAATAAAGCA TTTTTTTCAC TGCATTCTAG TTGTGGTTTG TCCAAACTCA TCAATGTATC

>HincII
|
>Bst1107I  >AccI
|          |
>AccI      >SalI
|          |
2050      2060      2070      2080      2090      2100
* | *      * | *      * | *      * | *      * | *
TTATCATGTC TGTATACCGT CGACCTCTAG CTAGAGCTTG GCGTAATCAT GGTTCATAGCT
PUC19 BACKBONE
>

>BsrBI
|
2110      2120      2130      2140      2150      2160
* | *      * | *      * | *      * | *      * | *
GTTTCCTGTG TGAAATTGTT ATCCGCTCAC AATTCCACAC AACATACGAG CCGGAAGCAT
PUC19 BACKBONE
>

>BanI
|
2170      2180      2190      2200      2210      2220
* | *      * | *      * | *      * | *      * | *
AAAGTGTAAG GCCTGGGGTG CCTAATGAGT GAGCTAACTC ACATTAATTG CGTTGCGCTC
PUC19 BACKBONE
>

>PvuII  >AseI  >EaeI
|      |      |
2230      2240      2250      2260      2270      2280
* | *      * | *      * | *      * | *      * | *
ACTGCCCGCT TTCCAGTCGG GAAACCTGTC GTGCCAGCTG CATTAAATGAA TCGGCCAACG
PUC19 BACKBONE
>

```

FIG. 8  
(CONTINUED)

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```

                                >SapI
                                |
                        >HaeII  >EaeI
                                |
2290      2300      2310 | 2320      2330      2340
*      *      *      *      *      *      *      *
CGCGGGGAGA GGC GGTTTGC GTATTGGGCG CTCTCCGCT TCCTCGCTCA CTGACTCGCT
_____e_____e_____PUC19 BACKBONE_____e_____e_____>

>BsiEI      >BsrBI
|            |
2350      2360      2370      2380      2390      2400
*      *      *      *      *      *      *      *
GCGCTCGGTC GTTCGGCTGC GGC GAGCGGT ATCAGCTCAC TCAAAGGCGG TAATACGGTT
_____e_____e_____PUC19 BACKBONE_____e_____e_____>

                                >AflIII
                                |
2410      2420      2430 | 2440      2450      2460
*      *      *      *      *      *      *      *
ATCCACAGAA TCAGGGGATA ACGCAGGAAA GAACATGTGA GCAAAAGGCC AGCAAAGGC
_____e_____e_____PUC19 BACKBONE_____e_____e_____>

2470      2480      2490      2500      2510      2520
*      *      *      *      *      *      *      *
CAGGAACCGT AAAAAGGCCG CGTTGCTGGC GTTTTTCAT AGGCTCCGCC CCCCTGACGA
_____e_____e_____PUC19 BACKBONE_____e_____e_____>

>DrdI
|
2530      2540      2550      2560      2570      2580
*      *      *      *      *      *      *      *
GCATCACAAA AATCGACGCT CAAGTCAGAG GTGGCGAAAC CCGACAGGAC TATAAAGATA
_____e_____e_____PUC19 BACKBONE_____e_____e_____>

>BssSI      >BsaWI
|            |
2590      2600      2610      2620      2630      2640
*      *      *      *      *      *      *      *
CCAGGCGTTT CCCCCTGGAA GCTCCCTCGT GCGCTCTCT GTTCCGACCC TGCCGCTTAC
_____e_____e_____PUC19 BACKBONE_____e_____e_____>

                                >HaeII      >SfcI
                                |            |
2650      2660      2670      2680      2690      2700
*      *      *      *      *      *      *      *
CGGATACCTG TCCGCCTTTC TCCCTTCGGG AAGCGTGGCG CTTTCTCAAT GCTCAGCTG
_____e_____e_____PUC19 BACKBONE_____e_____e_____>

                                >BsiHKAI
                                |
                                >ApaLI
                                |
2710      2720      2730      2740      2750      2760
*      *      *      *      *      *      *      *
TAGGTATCTC AGTTCGGTGT AGGTCGTTCT CTCCAAGCTG GGCTGTGTGC ACCAACCCCC
_____e_____e_____PUC19 BACKBONE_____e_____e_____>

```

FIG. 8  
(CONTINUED)

66550"515150

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      >BsiEI          >BsaWI
      |              |
      2770          2780          2790          2800          2810          2820
      *            *            *            *            *            *
      CGTTCAGCCC GACCGCTGCG CCTTATCCGG TAACTATCGT CTTGAGTCCA ACCCGGTAAG
      _____e_____PUC19 BACKBONE_____e_____e_____>

      >AlwNI
      |
      2830          2840          2850          2860          2870          2880
      *            *            *            *            *            *
      ACACGACTTA TCGCCACTGG CAGCAGCCAC TGGTAACAGG ATTAGCAGAG CGAGGTATGT
      _____e_____PUC19 BACKBONE_____e_____e_____>

      >SfcI
      |
      2890          2900          2910          2920          2930          2940
      *            *            *            *            *            *
      AGGCGGTGCT ACAGAGTTCT TGAAGTGGTG GCCTAACTAC GGCTACACTA GAAGGACAGT
      _____e_____PUC19 BACKBONE_____e_____e_____>

      >Eco57I
      |
      2950          2960          2970          2980          2990          3000
      *            *            *            *            *            *
      ATTTGGTATC TCGGCTCTGC TGAAGCCAGT TACCTTCGGA AAAAGAGTTG GTAGCTCTTG
      _____e_____PUC19 BACKBONE_____e_____e_____>

      3010          3020          3030          3040          3050          3060
      *            *            *            *            *            *
      ATCCGGCAAA CAAACCACCG CTGGTAGCGG TGGTTTTTTT GTTTGCAAGC AGCAGATTAC
      _____e_____PUC19 BACKBONE_____e_____e_____>

      3070          3080          3090          3100          3110          3120
      *            *            *            *            *            *
      GCGCAGAAAA AAAGGATCTC AAGAAGATCC TTTGATCTTT TCTACGGGGT CTGACGCTCA
      _____e_____PUC19 BACKBONE_____e_____e_____>

      >BspHI
      |
      3130          3140          3150          3160          3170          3180
      *            *            *            *            *            *
      GTGGAACGAA AACTCACGTT AAGGGATTTT GGTCATGAGA TTATCAAAAA GGATCTTCAC
      _____e_____PUC19 BACKBONE_____e_____e_____>

      >DraI          >DraI
      |              |
      3190          3200          3210          3220          3230          3240
      *            *            *            *            *            *
      CTAGATCCTT TTAAATTAAA AATGAAGTTT TAAATCAATC TAAAGTATAT ATGAGTAAAC
      _____e_____PUC19 BACKBONE_____e_____e_____>

      >BanI
      |
      3250          3260          3270          3280          3290          3300
      *            *            *            *            *            *
      TTGGTCTGAC AGTTACCAAT GCTTAATCAG TGAGGCACCT ATCTCAGCGA TCTGTCTATT
      _____a_____a_____a_____a_____a_____a_____>
      _____e_____PUC19 BACKBONE_____e_____e_____>
  
```

FIG. 8  
(CONTINUED)

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```

>AhdI
      3310      3320      3330      3340      3350      3360
      *      *      *      *      *      *
TCGTTTCATCC ATAGTTGCCT GACTCCCCGT CGTGTAGATA ACTACGATAC GGGAGGGCTT
      a      a      a      a      a      a
      e      e      e      e      e      e
      AMP-ORF
      PUC19 BACKBONE

>BsaI
      |
      >BsrDI      >BpmI      >BsrFI
      |      |      |
      3370      3380      3390      3400      3410      3420
      *      *      *      *      *      *
ACCATCTGGC CCCAGTGCTG CAATGATACC GCGAGACCCA CGCTCACC GG CTCCAGATTT
      a      a      a      a      a      a
      e      e      e      e      e      e
      AMP-ORF
      PUC19 BACKBONE

>BglI
      |
      3430      3440      3450      3460      3470      3480
      *      *      *      *      *      *
ATCAGCAATA AACCAGCCAG CCGGAAGGGC CGAGCGCAGA AGTGGTCCTG CAACTTTATC
      a      a      a      a      a      a
      e      e      e      e      e      e
      AMP-ORF
      PUC19 BACKBONE

>AseI
      |
      3490      3500      3510      3520      3530      3540
      *      *      *      *      *      *
CGCCTCCATC CAGTCTATTA ATTGTTGCCG GGAAGCTAGA GTAAGTAGTT CGCCAGTTAA
      a      a      a      a      a      a
      e      e      e      e      e      e
      AMP-ORF
      PUC19 BACKBONE

>Psp1406I
      |
      >FspI      >BsrDI      >SfcI      >MslI
      |      |      |      |
      3550      3560      3570      3580      3590      3600
      *      *      *      *      *      *
TAGTTTGCGC AACGTTGTTG CCATTGCTAC AGGCATCGTG GTGTCACGCT CGTCGTTTGG
      a      a      a      a      a      a
      e      e      e      e      e      e
      AMP-ORF
      PUC19 BACKBONE

>BsaWI
      |
      3610      3620      3630      3640      3650      3660
      *      *      *      *      *      *
TATGGCTTCA TTCAGCTCCG GTTCCCAACG ATCAAGGCGA GTTACATGAT CCCCATGTT
      a      a      a      a      a      a
      e      e      e      e      e      e
      AMP-ORF
      PUC19 BACKBONE

>BsiEI
      |
      >PvuI      >EaeI
      |      |
      3670      3680      3690      3700      3710      3720
      *      *      *      *      *      *
GTGCAAAAAA GCGGTTAGCT CCTTCGGTCC TCCGATCGTT GTCAGAAGTA AGTTGGCCGC
      a      a      a      a      a      a
      e      e      e      e      e      e
      AMP-ORF
      PUC19 BACKBONE

```

FIG. 8  
(CONTINUED)

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```

      >MslI
      |
      3730      3740      3750      3760      3770      3780
      *      *      *      *      *      *
      AGTGTATCA CTCATGGTTA TGGCAGCACT GCATAATTCT CTTACTGTCA TGCCATCCGT
      a      a      AMP-ORF      a      a
      e      e      PUC19 BACKBONE      e      e
      >ScaI
      |
      3790      3800      3810      3820      3830      3840
      *      *      *      *      *      *
      AAGATGCTTT TCTGTGACTG GTGAGTACTC AACCAAGTCA TTCTGAGAAT AGTGTATGCG
      a      a      AMP-ORF      a      a
      e      e      PUC19 BACKBONE      e      e
      >BsiEI
      |
      3850      3860      3870      3880      3890      3900
      *      *      *      *      *      *
      GCGACCGAGT TGCTCTTGCC CGGCGTCAAT ACGGGATAAT ACCGCGCCAC ATAGCAGAAC
      a      a      AMP-ORF      a      a
      e      e      PUC19 BACKBONE      e      e
      >PspI406I
      |
      >DraI      >BsiHKAI      >XmnI
      |      |      |
      3910      3920      3930      3940      3950      3960
      *      *      *      *      *      *
      TTTAAAAGTG CTCATCATTG GAAACGTTT TCGGGGCGA AACTCTCAA GGATCTTACC
      a      a      AMP-ORF      a      a
      e      e      PUC19 BACKBONE      e      e
      >Eco57I
      |
      >ApaLI
      |
      >BssSI      >BsiHKAI
      |      |
      3970      3980      3990      4000      4010      4020
      *      *      *      *      *      *
      GCTGTTGAGA TCCAGTTCGA TGTAACCCAC TCGTGCACCC AACTGATCTT CAGCATCTTT
      a      a      AMP-ORF      a      a
      e      e      PUC19 BACKBONE      e      e
      4030      4040      4050      4060      4070      4080
      *      *      *      *      *      *
      TACTTTCACC AGCGTTTCTG GGTGAGCAAA AACAGGAAGG CAAAATGCCG CAAAAAAGGG
      a      a      AMP-ORF      a      a
      e      e      PUC19 BACKBONE      e      e
      >MslI      >EarI      >SspI
      |      |      |
      4090      4100      4110      4120      4130      4140
      *      *      *      *      *      *
      AATAAGGGCG ACACGGAAT GTTGAATACT CATACTCTTC CTTTTTCAAT ATTATTGAAG
      a      AMP-ORF      a
      e      PUC19 BACKBONE      e
  
```

FIG. 8  
(CONTINUED)

0034516 054000

FIG. 8  
(CONTINUED)

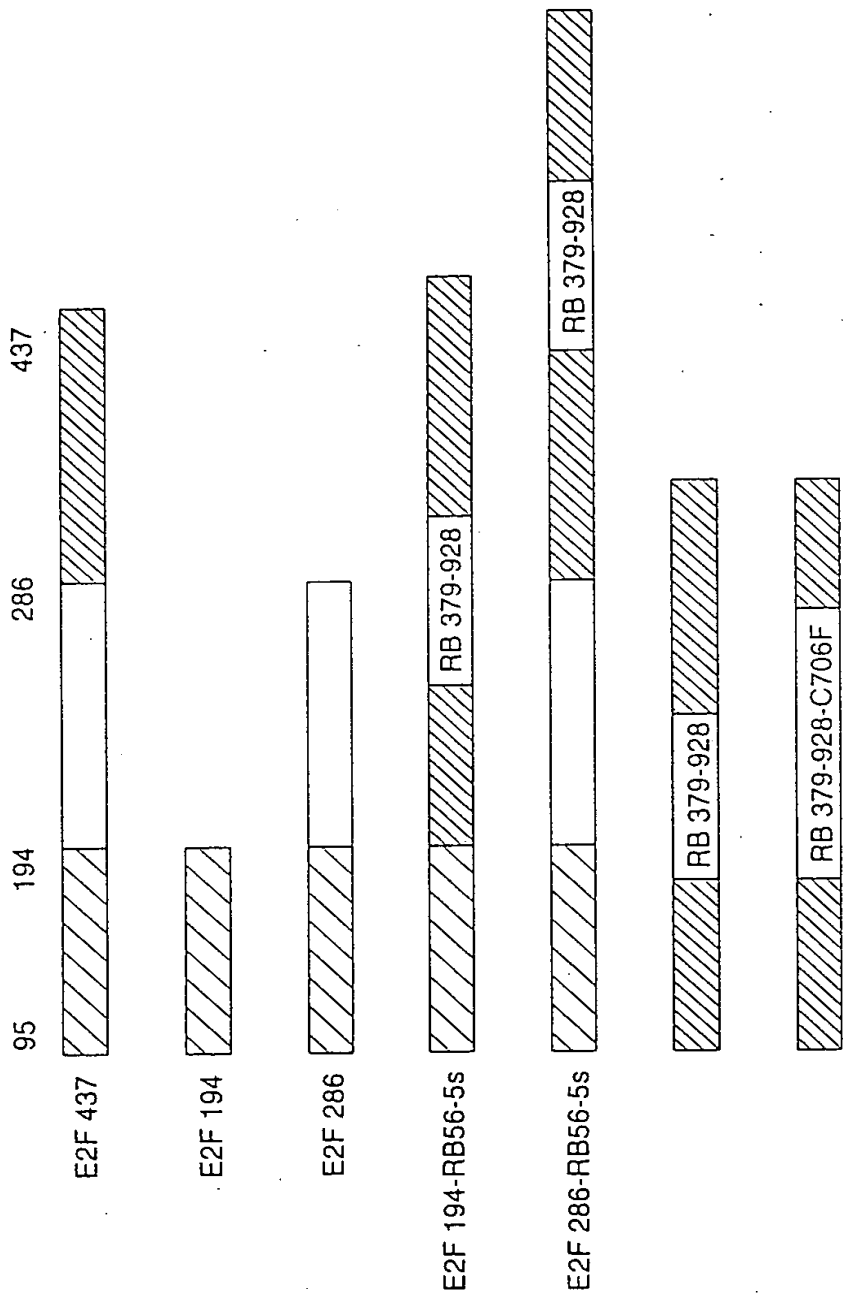


FIG. 9

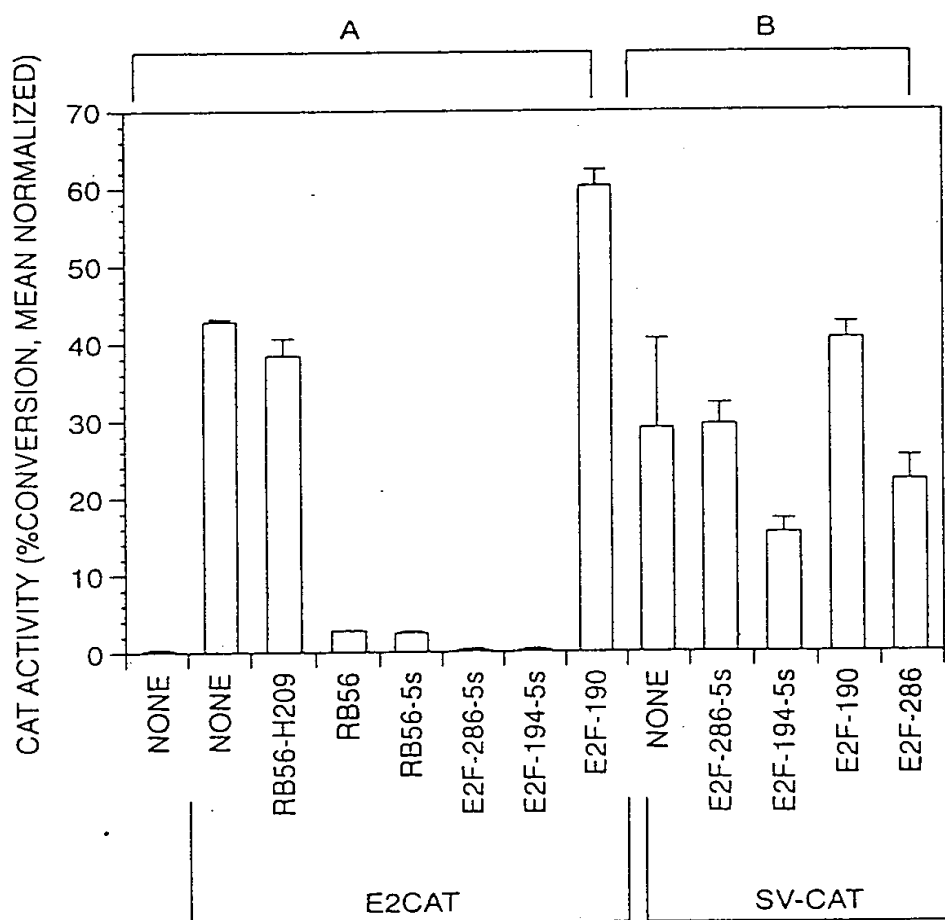


FIG. 10



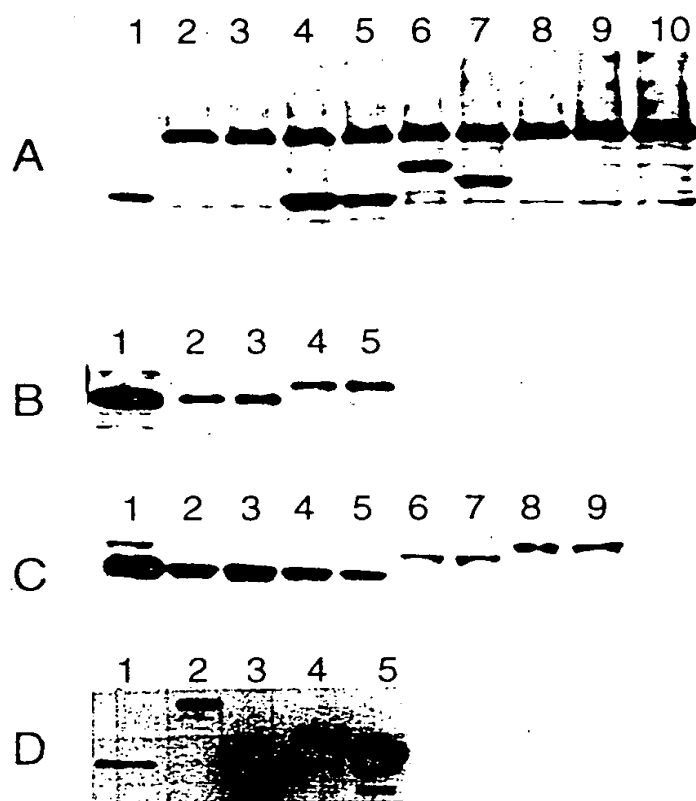


FIG. 11

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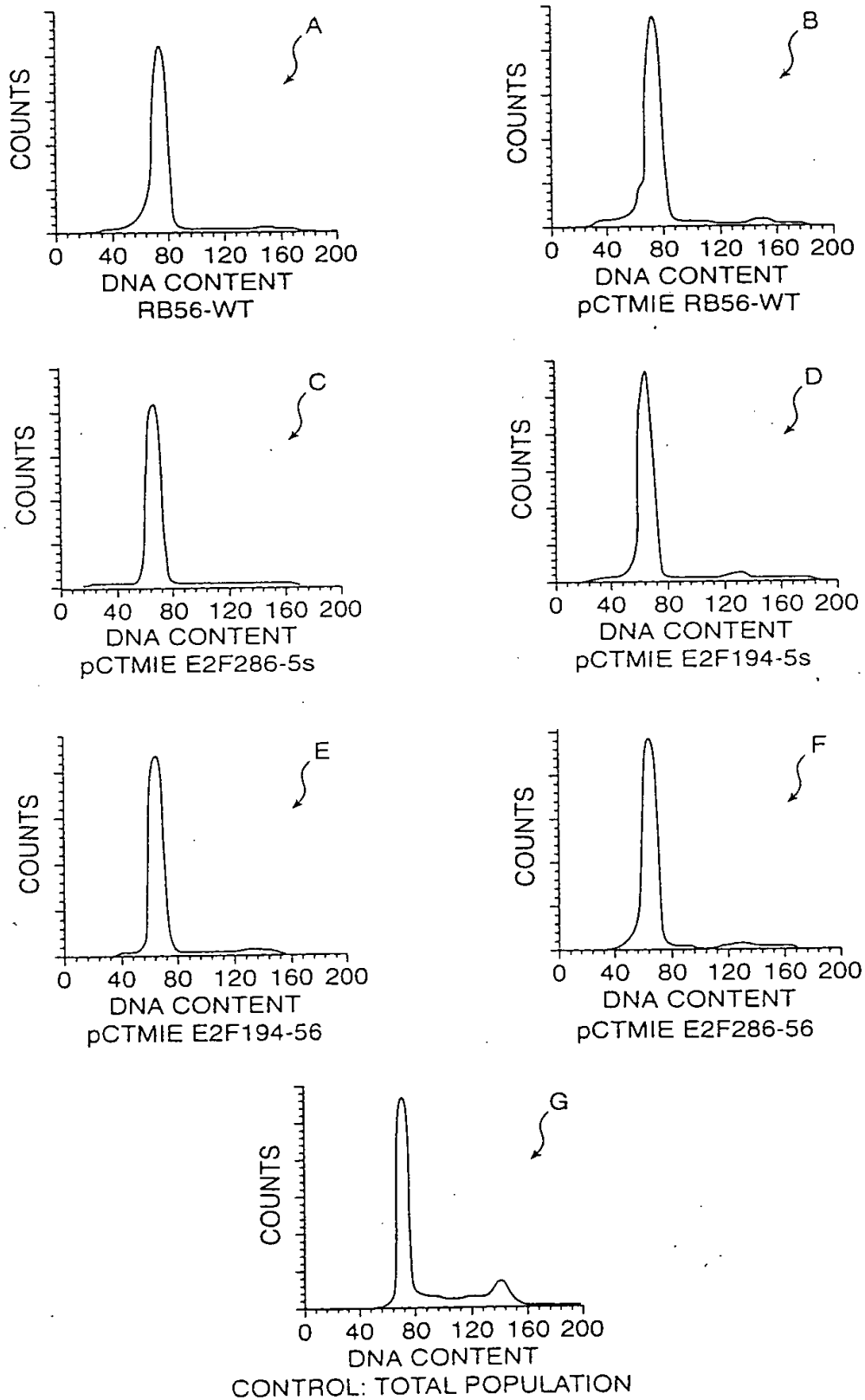


FIG. 12

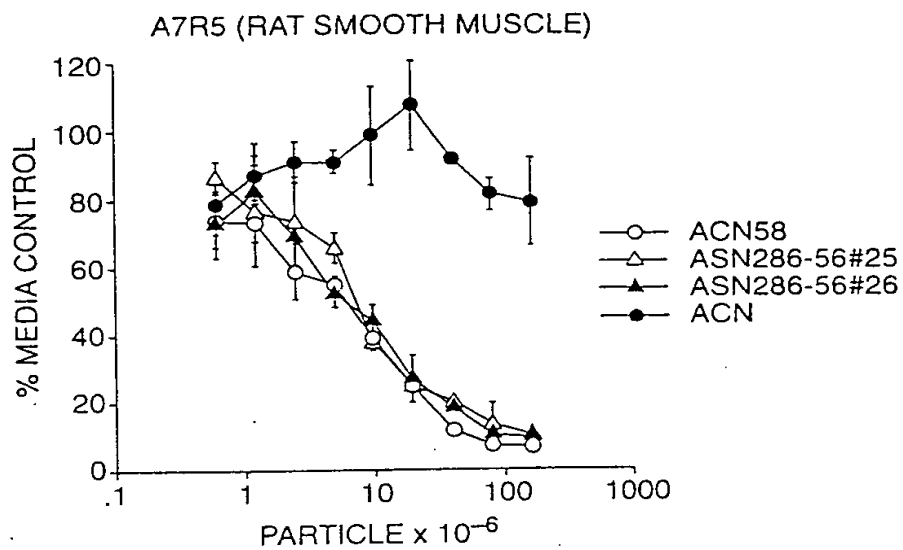


FIG. 13A

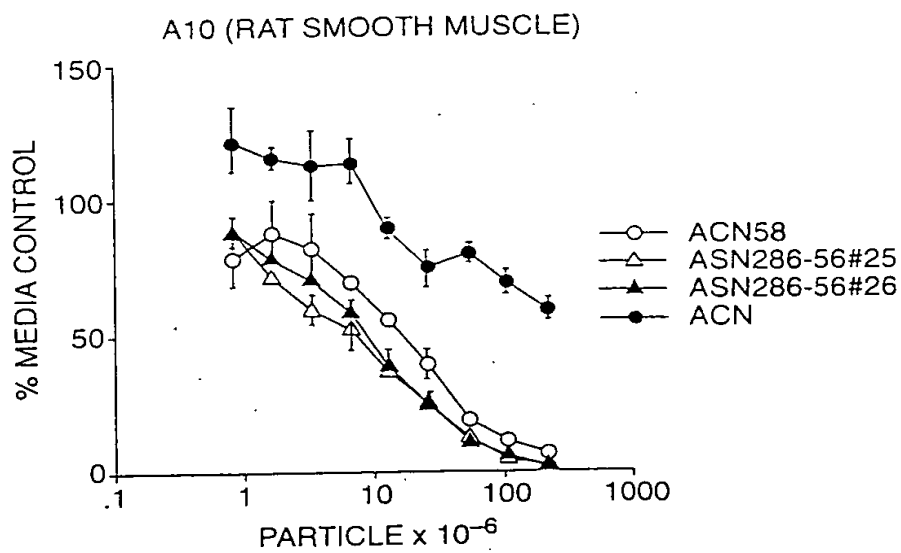


FIG. 13B

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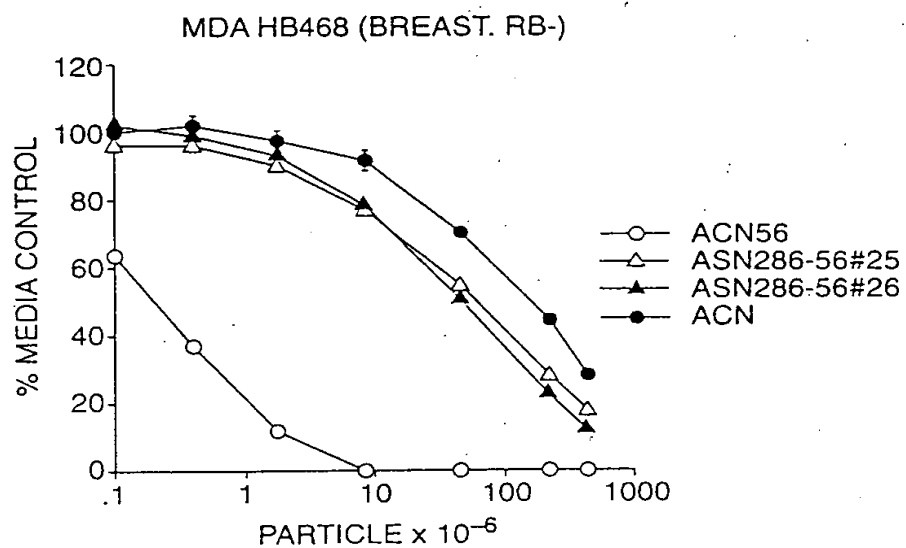


FIG. 14A

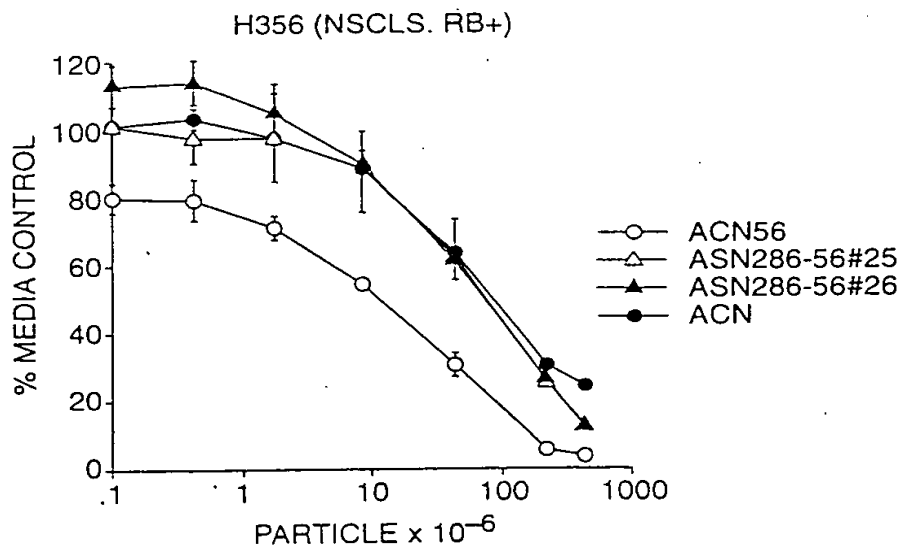


FIG. 14B

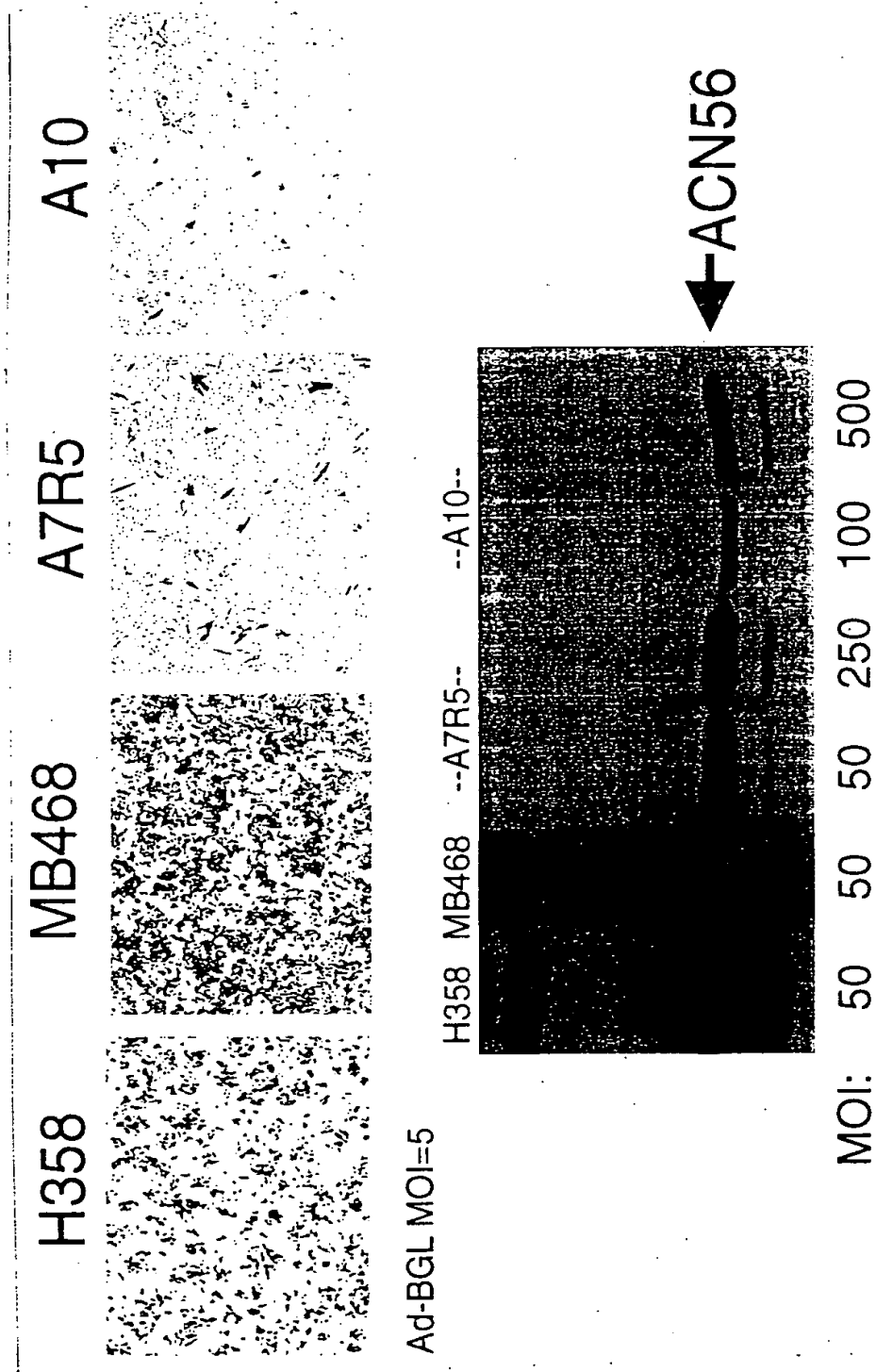
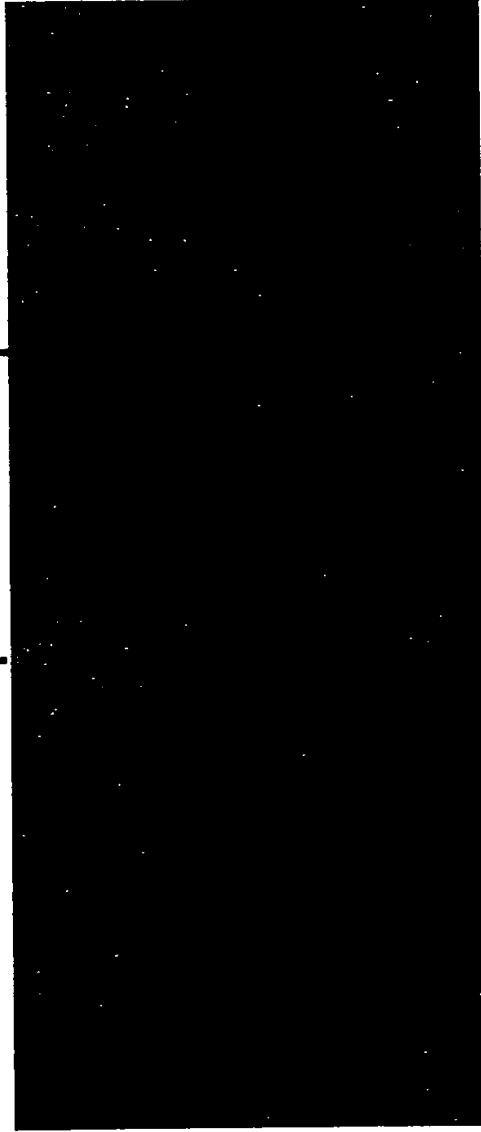


FIG. 15

MB468 (BREAST) | A7R5 (SM) | A10 (SM)



UN 50 250 500      UN 50 250      UN 100 500

FIG. 16

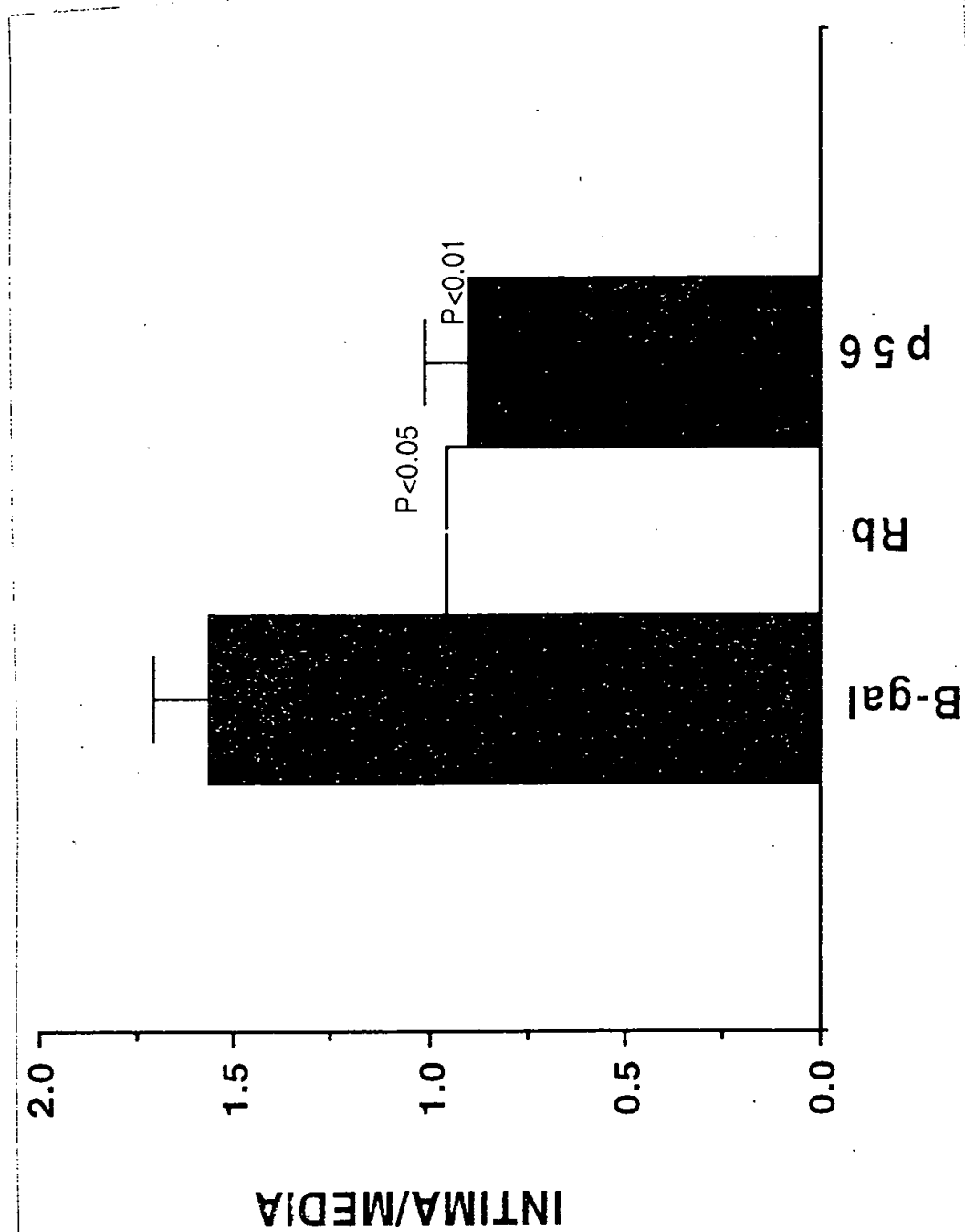
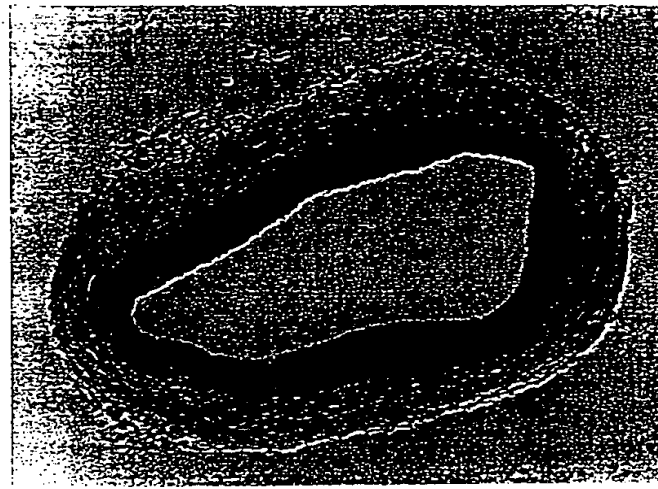


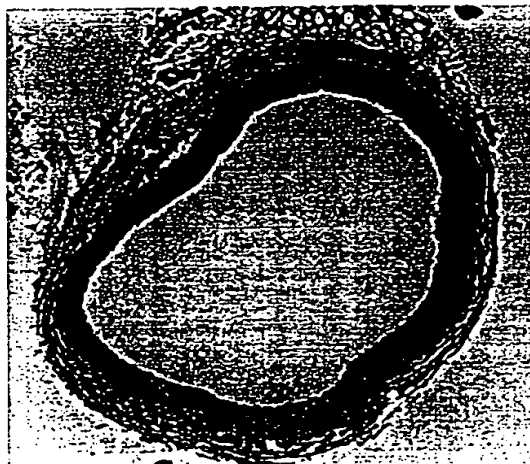
FIG. 17



p56<sup>RB</sup>-Treated



Restenotic



Normal

FIG. 18



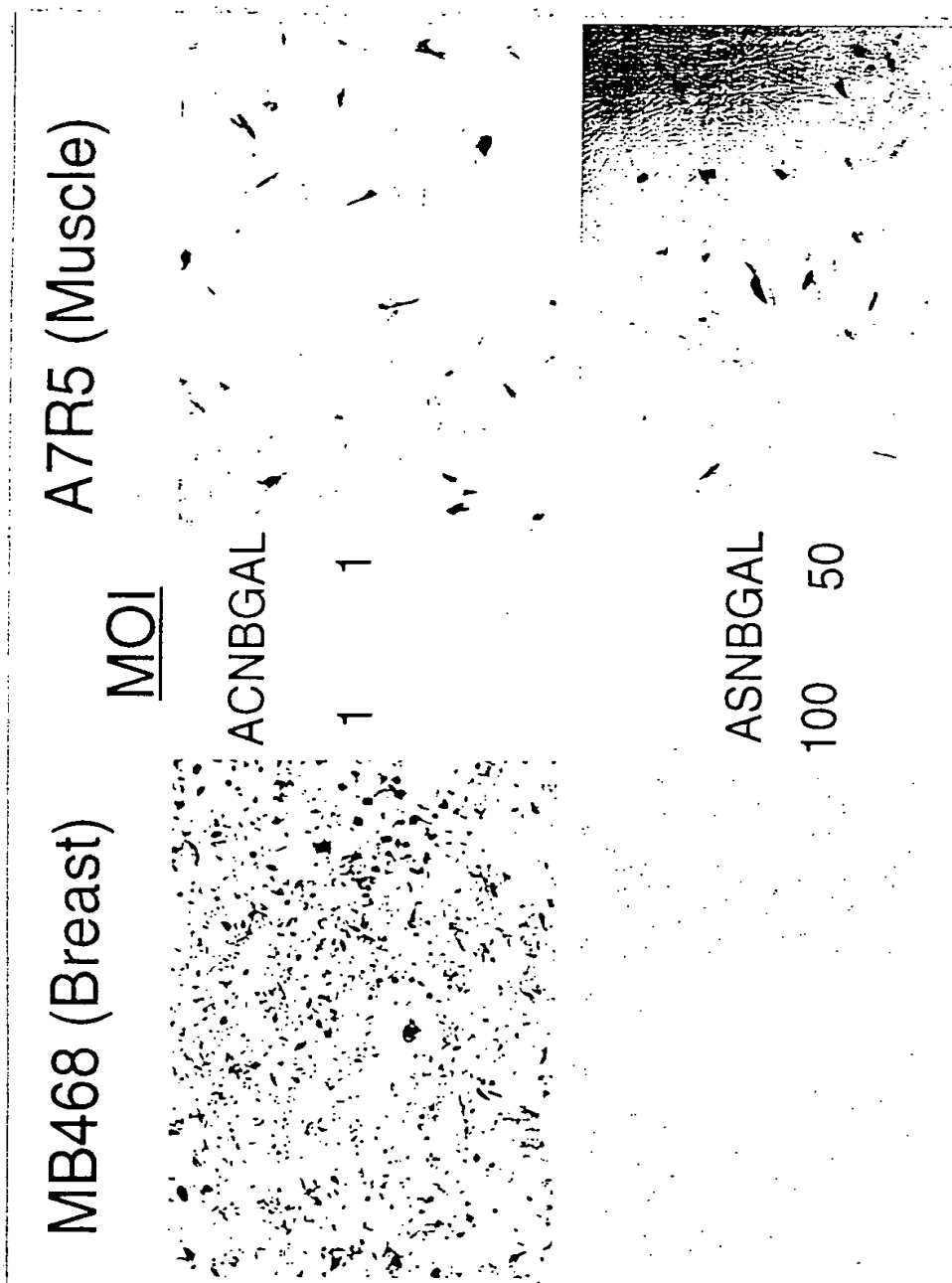


FIG. 19

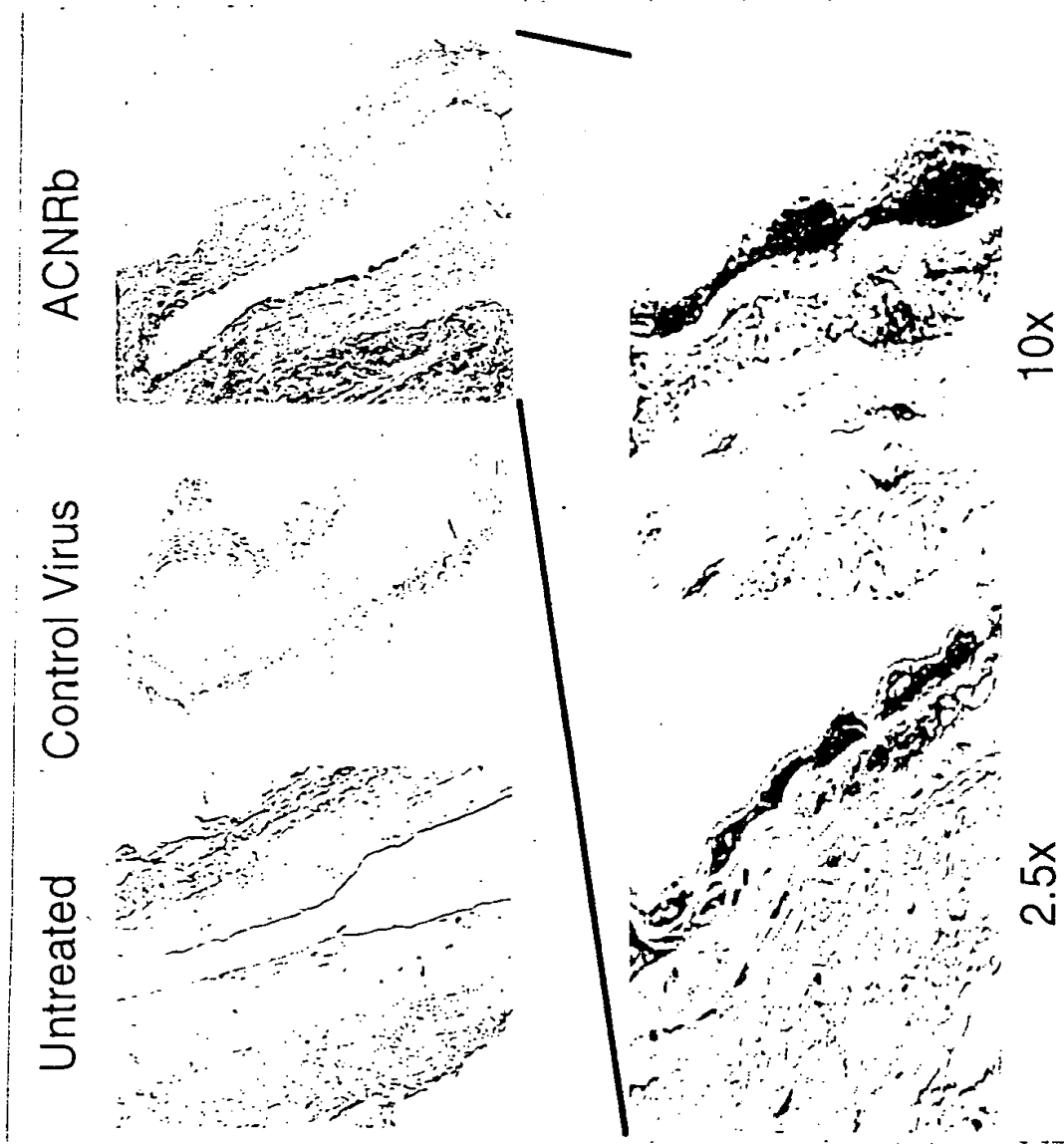


FIG. 20

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A7r5 3H-THYMIDINE

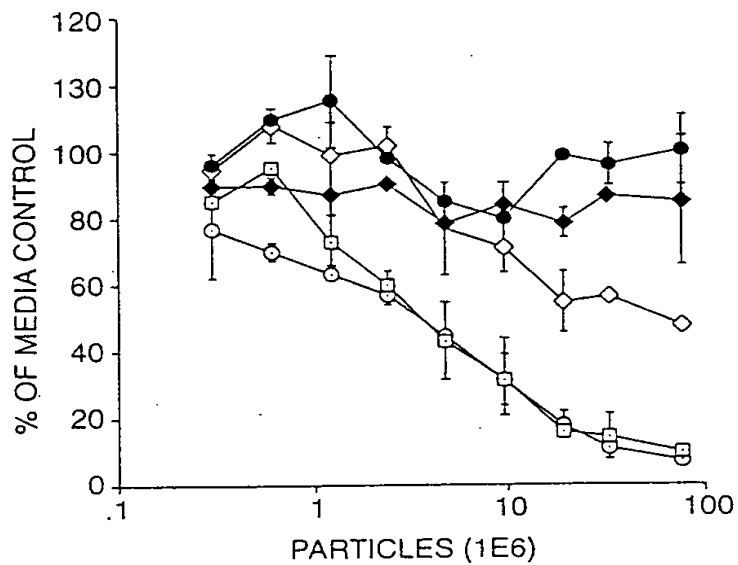


FIG. 21A

MDA468 3H-THYMIDINE

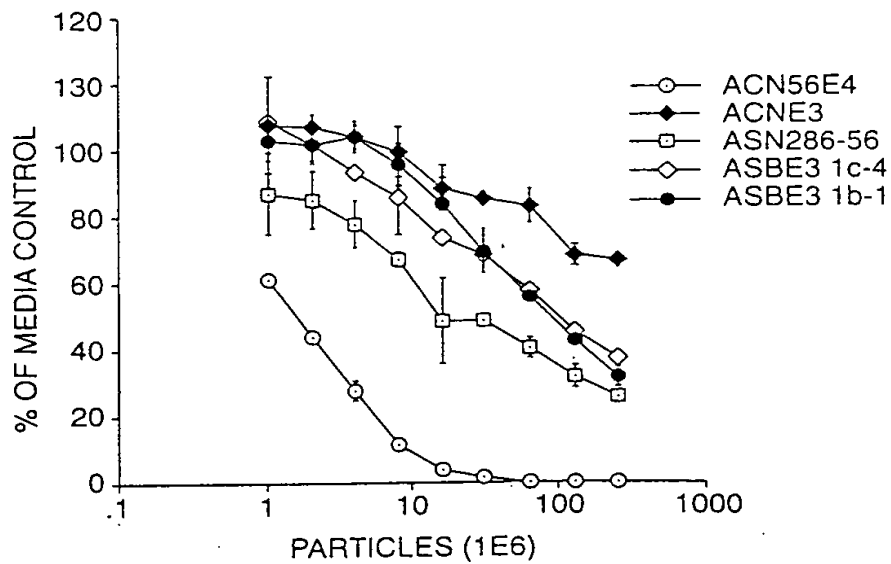


FIG. 21B